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ABSTRACT

Designed to provide a conceptual and workable framework for the development of interdisciplinary information systems in Southern Africa, this handbook focuses on Southern Africa's information needs and addresses the problems between theory and practice in information transfer and utilization. The handbook is divided into two major parts. The four sections in the first part deal with library and information science in higher education in the area, including the need for reserve sections in university libraries to adopt the learning resource concept; strategies for developing an automated university library system; policy and procedures for establishing an interlibrary loan system; and the need to establish a consortium for sharing information on research done in Southern Africa. The five sections in the second part examine vital areas of information needs, including information and referral services in agencies serving adults; the dynamics of information processing and packaging for the area; education and training strategies to contain and manage the impact of refugees; developing a prototype information resource for a Southern African Center for Appropriate Technology; and how to conduct a seminar to educate professionals in information sharing. Selected bibliographic references on the topics discussed are provided for each section. A glossary of computer and information science terms and several exhibits of related materials are attached. (CGD)

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Stephen Sipho Mncube

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KEY ISSUES IN LIBRARY AND INFORMATION SCIENCE FOR SOUTHERN AFRICA

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DEDICATION

This study is dedicated to the gallant sons and daughters of Southern Africa, who sacrificed their lives for the liberation of our motherland. In the words of J.J.R. Jolobe we say unto you:

> "Apho igazi Lenu Lithe Lathontsela khona,
> Kolimila intyanty ambo evumba Limnandi, Eliya
> Kuthwala ngamaphiko empepho, Zithi zonki
> izizwe zilirogele."
>
> (Wherever your blood has dropped, will
> blossom a flower of exceeding sweetness, whose
> scent will be carried on the wings of the air,
> and all the nations will inhale it.)

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INTRODUCTION

Many advocates of information needs in Southern Africa, focus their attention on the gap between the form of information and its usability. There are, however, other issues which also need to be considered. These neglected issues relate to the quality, quantity and organization of information.

The purpose of this book is to enable the reader to come to grips with the essential trends in library and information science on a global level. These papers are intended, not for scholars, but for individuals who are actually involved in the day to day pragmatic experiences of the field. Equally important, in the face of the massive proliferation of information throughout the world, are the selected bibliographies which accompany each section.

The sources referenced in the bibliographies were derived mainly from the Educational Research and Information Clearinghouse (ERIC), and are thus primarily from the United States. This was done deliberately, not to provide yet another example of North American imperialism, but rather to reflect the kind of work which has been generated in a highly automated society. Included in the Appendix is information from ERIC describing how similar material may be obtained directly from their office in Washington, D.C.

The colonial legacy in Southern Africa is still an intervening variable in the growth and development of libraries and information systems in the region, with each country finding itself in a somewhat different situation. The situation in Mozambique, for example, is exacerbated by the fact that the former colonial power, Portugal, is itself underdeveloped by European standards. On the other extreme, one finds in South Africa sophisticated library institutions that are unfortunately designed to promote the fascist system of apartheid. In the other countries of the region, the British influence on library education, while

positive in some ways, does not provide sufficient training for the future, nor does it adequately address the needs of the present.

Two areas in particular have been grossly neglected in the field of information science in Southern Africa.

1. The creative facilitation and support of new educational enterprises in library and information science to meet the needs of disenfranchised persons.

2. The development of a forum for the exchange of ideas among library and information specialists so that policy development is consistent with the information needs of the region.

It is not surprising, therefore, that the Southern African Development Information System (SADIS), which conducts analyses of the information needs of the region, indicates that little or nothing was done by the colonial rulers to meet the information needs of the population at large. The colonial outlook toward the information needs of the region was parochial at best. Under the colonial system, the majority of the population was entitled only to fragmented information sharing.

In discussing problems occurring in Southern Africa one can conclude that a tradition of scientific research has never existed and that libraries have existed solely for literary scholars. It is only in South Africa that scientific libraries exist, but they are designed to perpetuate the evil system of apartheid. It is clear that there is now a need for more technical information. However, neither the people nor the libraries are adequately equipped to handle the problem. Only a few individuals who have become aware of these needs are actively looking for solutions.

In delineating the information needs of Southern Africa, at least five problem areas can be identified. They are:

1. Lack of economic resources in many countries to invest in libraries or information storage systems;
2. Irrelevance of international information at a grassroots level;
3. Rapid introduction of modern technological hardware without supporting software components for such technology;
4. Lack of operational research on the specific information needs of a given country;
5. Insufficient documentation of available resources.

Information systems and data banks must be designed to take into account financial needs, resources and expertise available to manage such systems. Even when economic resources are abundant, it is wasteful to try to start and keep an information service center for every segment of society. There must be an attempt to utilize existing facilities in a more efficient and cost-effective way. Indeed, there are many such systems that operate on an international basis. Yet, even on an international level, one of the problems with most information systems, is that they have not been able to provide a viable mechanism to share and exchange information.

Another concern is that modern technological hardware has been too rapidly introduced, without an adequate supply of appropriate software components. There is an urgent need for software suppliers to provide appropriate software for the emerging information systems in Southern Africa. It is important to establish usable systems of information transfer, referral and retrieval as well as systems of information management.

Documentation of local materials and research papers is equally important. There must be a system to document these resources and duplicate them for wide dissemination. Currently, scholars in Southern Africa are faced with the dilemma of producing works which are destined to reach only a small audience. As a result there is much duplication of effort, and very little chance for a researcher to build upon already existing studies.

In general, it should be pointed out that operational research on the subject of information needs has not been carried out sufficiently. There seems to be some reluctance to find ways of solving the problems of information needs. The research which has been done on information science in Southern Africa has been very theoretical and offers little in the way of practical application to existing and emerging library facilities in the region. Studies of information science have often addressed them- selves to information services for specific systems or programs. When more specific, they tend to focus more on the structural aspects of information service.

There are also a number of societal changes that are confronting information services. The awesome task of trying to keep up with such changes and at the same time incorporating new findings is a significant problem facing information services in Southern Africa. Some of these changes include: the tremendous acceleration of newly-found knowledge amounting to a virtual information explosion, a rapid expansion of new technology, increasing involvement of governments with information services, and an increasing demand for new, relevant information services. All of these are causes for concern in Southern Africa, and it is important that a conceptual framework for interdisciplinary information systems be developed.

ACADEMIC ENVIRONMENT

In recent years there has been a trend in Southern Africa to emphasize technical and functional education that is interdisciplinary and more diverse in its orientation. This is a direct result of strategies to meet the specific educational needs of the growing population in Southern Africa. As a natural consequence of rapid change and development in the political sphere of the region, as well as the constraints imposed by limited resources, interdisciplinary offerings are structured to be a synthesis of theory and practice.

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In South Africa's educational system there has been strong resistance to this movement toward a more interdisciplinary approach to education. A major reason for the decadence of the South African system is that it has the resources to perpetuate a strict separation of disciplines. The closer relation of different academic departments now taking place in most institutions of higher learning is a direct result of this movement toward interdisciplinary integration. This trend is beginning to be more pronounced in many institutions of higher learning in other Southern African countries as well because it is proving to be cost-efficient. Also, it integrates universal and pluralistic concepts which are necessary in any technical and functional educational endeavor. However, there remains a notable absence of a systematic approach to information needs and information capabilities.

A number of problems are identified with respect to interdisciplinary education. The primary concern is how to bridge theory and practice in packaging interdisciplinary information. Developments in the region have created diverse societies and cultures, and cross-cultural transfer of information has become a necessity.

The major problem confronting the sharing of scholarly works in Southern Africa is simply the difficulty of translation. Translation is not only a slow process, but also one which is not readily available, especially when the target language is among those that have been mostly oral and not well documented. This is generally the case for the languages of Southern Africa. Thus, there must be some efficient means to transfer information multi-lingually and multi-culturally.

The successful development of Southern African information systems will ultimately depend upon the commitment of substantial resources, especially financial resources. The successful application of this technological information will require more than the mere receiving and storing of it. In addition to the tasks of acquiring and organizing informational materials, channels must be

established to analyze incoming information. Too much of the technological information that does get transferred out of the industrialized nations is never utilized because it is unsuited for the consumption of users in Southern Africa. A great deal more effort must be made to analyze, package and disseminate materials on existing and forthcoming information in all vital areas of work and study so that these technologies will be accessible to the Southern African infor- mation-user community.

Another hindrance to the development of information systems in the region is the fact that information resources transferred to Southern Africa are frequently value-laden, rendering them incompatible with the aims and aspirations of the cultural development of the region. Aside from this problem of content, there is the problem of format and presentation. Available information is not always presented in accordance with the literacy and socio-economic levels of the targeted population. Therefore, obtained information often sits idle, contributing little or nothing to the development of the receiving community.

Another aspect of information transfer that poses a major challenge to the Southern African region is the introduction of automated information storage and retrieval systems. Southern Africans involved in university administration and government economic planning realize that their users must take a hand in designing information systems and data banks of their own if they are to meet the unique needs of the region. In other words, the management of informational resources is becoming as important as the actual substance of those resources.

The immense quantity of information available from the industrialized nations is overwhelming. For Southern Africa, the expanding quantity of materials must be minimized to some extent by sifting out the useful information from the non-useful, to make it as accessible as possible to the potential user community.

This book is intended to provide a conceptual framework for some of the most pertinent issues in library and information science in the Southern African region. Equally important, the book bridges the gap between theory and practice in information dissemination by providing objective clarification of this vast area of library and informational science. The book aims at a deeper understanding of information science and emphasizes an imaginative and creative approach. It is dedicated to simple and cost-efficient ways to promote the self-reliance so greatly needed by Southern Africa in today's world.

The first four sections of this book explore the impact of library and information science on higher education in Southern Africa. The remaining 5 sections examine the impact of library & information science on several specific areas of importance to Southern Africa.

Selected bibliographic works derived from the ERIC Clearinghouse and other sources on each topic discussed are provided for further reading in the area. These bibliographic citations were randomly selected from comprehensive computer searches that were run on the specific subject areas discussed in each section of this handbook. They are intended only to give some idea of the type and variety of materials that are available.

LIBRARY AND INFORMATION SCIENCES IN HIGHER EDUCATION IN SOUTHERN AFRICA

PART 1

PART 1: SECTION 1

THE NEED FOR THE RESERVE SECTIONS OF UNIVERSITIES IN SOUTHERN AFRICA TO ADOPT THE LEARNING RESOURCE CONCEPT

In this modern age of information explosion, one of the most urgent needs is to master information, rather than to be its servant. The master commands information, whereas the servant is simply overwhelmed by the flood of information and does not know what to do with it.

Information is pooled in libraries and clearinghouses, which are numerous around the world. Needless to say, it is tremendous work--time consuming, energy consuming, and money consuming--to keep numberless publications catalogued and available, or to keep information computerized for prompt and thorough usability. A great deal of effort has been made to enable libraries and clearing houses to share resources, reduce costs, and avoid duplication in handling the global flood of information

The traditional role of libraries has been to provide indices for their users. Books, magazines and articles are identified by title indices. Titles are subsequently classified according to fields: American history, British history, biology and so forth. Users must make their choices of which books they take from among the many publications available in the particular subject areas they are working on. Librarians are trained to help users go to the right place for that certain piece of information. However, the mission of libraries and librarians ends here. Users must use a process of trial and error, reading here and there in various books, and make their own decisions as to how to comprehend, interpret, evaluate and judge the information.

Information transfer is one of the primary functions of educational institutions. Here, humans, instead of books or other things that are inhuman, generate and transmit information. Thus, the generator is active and the receiver is passive in this setting. The information transmitted by the faculty members teaching a course may be obtained by them directly or from pooled resource libraries. It is this trend that now needs to be explored in

Southern African university library learning resource systems.

THE NEED FOR A NEW FOCUS

The reserve sections of most university libraries have been designed with special emphasis on post-secondary education that is interdisciplinary and more diverse in its orientation. This section of the libraries is the most important in providing accurate information directly related to curriculum activities to both students and faculty members. The reserve sections are therefore catalytic agents that take into account the curriculum designs of the universities along with their philosophies, aims and aspirations. It is commensurate with this mandate that the reserve sections must now consider expanding their mission, striving to develop their resources in a holistic way by considering their clients in relation to their learning environment.

In order for the reserve sections of university libraries in Southern Africa to improve their services to meet the demands of their user communities, they should extend their functions to become learning resource centers, as well. This means the traditional function of a reserve section can no longer be the sine qua non to all its operations. Instead, the reserve sections, by incorporating the learning resource concept, will have to develop the capability to deliver inter- disciplinary information to local users. The learning resource concept as applied to the reserve sections of universities in Southern Africa may entail the following functions:

-- To provide objective clarification of the information needs of the user community.

-- To explore the feasibiiity of soliciting curriculum syllabi from university faculty. These syllabi will be reviewed carefully by the learning resource center coordinators. and the bibliographies of the revised syllabi will be used to guide acquisitions of materials.

-- To insure the continued improvement of holdings by constantly monitoring the degree of materials frequently used by the clients.

-- To formulate strategies for making frequently used materials available in larger quantities.

Since the users are an essential part of the information transfer, they must provide a guideline, in order to use the learning resource center to their maximum advantage. The learning resource center's guide for the users should be prepared to include among other things, the following elements:

1) *Statement of purpose*: What is the learning resource center?

2) *Resources:* What materials are provided.

3) How to use the center.

The user community of the Learning Resource Center may consist of the following types:

1. Student body: students, researchers and others who use the library resources of the universities.

2. Faculty members: professors, lecturers, facilitators, instructors, etc., trainers, counselors, others.

3. Administrators: policy makers, planners, registrars, and others.

Students

The students will benefit from the learning resource center through the use of the information processed in the following areas:

1) Materials pertaining to course offerings.

2) Information on various schools or departments within the university so that they can make more intelligent choices regarding areas of specialization.

3) General information (e.g., catalogues of institutions within Southern Africa and abroad).

Researchers

The learning resource center could be of great service to researchers by providing bibliographies in specialized subject areas. It is anticipated that university research units will play a major role in compiling up-to-date bibliographies and making them available to the learning resource centers. Other services to the researchers are as follows:

1) Identify primary sources for research projects.

2) Supply researchers with addresses of institutions with interest in the same problem areas.

3) Recommend materials for major research investigations (e.g., manuscripts, books, periodicals and other publications)

Faculty

In respect to university faculty members and others associated with learning and teaching, the learning resource centers will solicit their course curriculum design and related bibliographic information that is vital to students' needs for information. After this is done, books, articles, manuscripts, etc., can be acquired from other libraries to provide faculty members with materials for:

1) Formulating programs or administrative procedures and budgets.

2) Developing long-range plans for programs and administrative units.

3) Planning the development of new areas of study and related material resources.

It is anticipated that information on administration and management will provide decision makers with an accurate information base to address problems in the vital areas of academic growth in the universities. However, the administrative information needs should not be given the same priority as the students, researchers and faculty related information.

EJ 271 609 JC 503 042
The Future of Learning Resources Centers: A Partnership with Emerging Technologies.
Terwilliger, Gloria *Community College Review;* v10 n2 p41-43 Fall 1982
Views today's learning resources centers as information networks as well as instructional support systems. Calls for acknowledgement and promotion of these roles in future strategic planning for resource allocation. Feels that standardization of data bases and access will expand future opportunities for networking and resource sharing with other agencies and institutions.

EJ 305 693 JC 503 603
Application of Micros in Libraries and Learning Resource Centers. Carter, Eleanor M. *New Directions for Community Colleges;* v12 n3 p71-80 Sep. 1984
Indicates that the applications of microcomputers at libraries and learning resource centers at two-year colleges range from direct patron services to administrative and library support functions. Describes user services, user control systems, administrative applications, and information exchanges in the context of the system at State University of New York at Cobleskill.

EJ 308 762 IR 513 357
A Profile of the Library Learning Resources Center in Small Community/Junior Colleges.
Mosley, Madison, Jr. *College and Research Libraries;* v45 n5 p392-95 Sep. 1984
This study identifies administrative practices in resource centers of small, 2-year, publicly supported community and junior colleges in following areas; components of resource center, staffing patterns, organization of collection, format of card catalog, online systems and reference services, anti-theft systems, and assistance to faculty in design of instruction. (Nine references are included).

EJ 273 171 SE 532 355
University Learning Centers and Computer-Based Learning. Bork, Alfred *Journal of College Science Teaching;* v12 n2 p81-85 Nov. 1982
Discusses college and university learning resource centers emphasizing the use of computer-based materials in the centers. Topics/issues addressed include advantages of computer use, lack of suitable materials, materials evaluation, and criteria for good computer-based learning materials.

ED 269 039 IR 051 516
Librarianship and Documentation Studies. A Handbook of Teaching and Learning Materials. Hutteman, Lutz, Ed. *German Foundation for International Development, Position Paper;* Bonn (West Germany) Sep 1985 136p
Based on the belief that socio-economic & cultural development in the pan-African region can be best promoted if it is supported by sound information and documentation services, the education and training of information personnel has become one of the major program areas of the Education, Science and Documentation Center of the German Foundation for International Development (DSE). This reader, which is intended to serve as a basic tool for the training of information personnel at certificate and diploma levels throughout the countries of the region, includes nine articles: (1) "Interlibrary Lending in East Africa" - J.M. Ng'ang'a; (2)"The role of the Library in the Process of Conducting Research" - J.M. Ng'ang'a; (3) " The Provision of Appropriate Reading Material for School Children in Southern African Region" - C.I.D. Nyirenda; (4) "Information Needs of Small Scale Business Enterprises: A Case study of Botswana" - T.F. Kgosidintsi; (5) "Development of Kenyatta University College Library 1972-84" - J.M. Ng'ang'a; (6) "User Needs: A Mangers Tool for the Development of Efficient Services. A Practical Approach" - E.W. Muya; (7) "Information Services for Current Research in the Sudan" - C. Wesley; (8) "Public Relations: A Tool for Library Development " - K.J.

Mchombu; (9) "Collection Development and Dependence within the SADCC Configuration of Eastern Central, and Southern African States" - J.R. Neill.

ED 220 095 IR 010 315
Solving College and University Problems Through Technology. Mebane, Donna Davis, Ed. Inter-university Communications Council (EDUCOM), Princeton, NJ; Position Paper, Originally presented at the EDUCOM Annual Conference (Atlanta, GA, October 1-3, 1980) 1981 481p
Addressed to individuals in higher education who are concerned about the application of information and data processing technologies to problems in college and university administration, instruction, and research, the 43 papers in the collection are concerned with such topics as the nature of new information technology; the use of information technology in institutional resource management and program planning; institutional strategies for document preparation and information dissemination; information technology applications for student recruitment and enrollment activities, fundraising and alumni relations, and monitoring and controlling institutional energy costs; word processing for instructional and research purposes; developing a computer-literate faculty; access to specialized educational resources through computer systems; national and regional resource sharing organizations; the impact of computer technology on library organization and staffing; the use of computers for library circulation and inventory management; information technology and the storage and use of library holding, with special attention to document delivery, remote access systems, and networking and national bibliographic databases; and contrasting views on the role of computer and information technology in institutions of higher learning.

EJ 304 470 IR 512 925
The Library: Center of the Restructured University. Battin, Patricia *College and Research Libraries*, v45 n3 p170-76 May 1984: Position Paper

Analyzes traditional roles and services of academic libraries, summarizes new communication links, and suggest major policy areas to be considered by university officers; centralized financial and technological planning, integration of information services with academic programs, access to scholarly resources, electronic publishing, copyright and ownership, research and development in information technology.

EJ 226 303 SE 527 392
Computer Revolution in the Learning Resources Center. Daehler, Russ; Kuszynski, Larry *Technological Horizons in Education,* v7 n4 p34-35 May 1980
Automating a library system via computer can increase efficient handling of all operations including circulation, cataloging, acquisition, and bibliographic reference.

ED 252 164 HE 018 039
The Learning Center as Consultant to the Academic Community. Kochenour, Edith O.; and others Apr 1984 Conference Paper. Presented at the Annual Meeting of the American College Personnel Association (Baltimore, MD, April 1984)
Rationales for the college learning center to provide consulting services are considered, along with the literature on learning centers as consultants to the university community. Attention is directed to an actual consultation intervention, in which the learning center at the University of Utah worked with the coordinator and teaching assistant staff of an introductory psychology course. In addition, a consultation model and information on its application are presented. The learning center consultant is a specialized professional, who has expertise in areas such as how students learn, skills that can enhance student learning, and assessment of under achieving students. Potential consultees are from academic departments, college administration, student groups, and other student service agencies. At the University of Utah, the coordinator for the introductory psychology course sought consultation because of the high number of poorly-performing students. The consultation resulted in two interventions consisting of changes in course structure and

administration and direct service presentation to the class. The effect of the changes on student grades was assessed. The consultation model divides the consultation into 12 stages, including initiation/entry, early contact, system overview, assessment, and problem formulation.

EJ 272 938
Resource Sharing and the Network Approach.
Shaw, Ward, *New Directions for Higher Education; No 39*
v10 n3 p55-60 Sep. 1982
The major benefit of library automation lies in the potential for sharing infrequently used titles among libraries through local, regional, national, and international networks. These offer administrators a powerful tool for maximizing their institution's research resources and flexibility.

PART 1: SECTION 2

STRATEGIES FOR DEVELOPING AN AUTOMATED UNIVERSITY LIBRARY SYSTEM IN SOUTHERN AFRICA

The university libraries of Southern Africa are in most respects no different from well established university libraries in developed nations. Their holdings, staffs' credentials, buildings and acquisitions are comparable to leading university libraries throughout the world. From this premise some suggestions can be made on how automation may be approached at university libraries in Southern Africa.

PURPOSE

Clearly, the automation of university libraries in Southern Africa must be holistic in its approach. That is, there should be a coordinated approach to acquisition, cataloging, circulation, and other major functions of the libraries in order to achieve a completely integrated system.

Equally important in the design of the automated library system should be the consideration of other library branches to which the main library is obligated to provide support services.

Finally, the automation of university libraries should be in harmony with other emerging operating systems in Southern Africa in order to support data collection and retrieval from other institutions if possible.

SCOPE

The introduction of automation into the university libraries of Southern Africa will result in open-ended program development. That is to say, the initial elements of the libraries to be computerized will undoubtedly be followed by others until the computer system is used to full advantage in all elements where it can serve a useful purpose.

SUGGESTED SUBSYSTEMS

Several subsystems are suggested in the operational areas, i.e., circulation, acquisition, and the reserve/

learning resource section. Brief descriptions of the objectives of these sections are provided below as an illustration. The final system to be adopted may or may not be patterned after these objectives.

CIRCULATION: OBJECTIVES OF AUTOMATION

1. To speed processing of material loans from the time of first inquiry until the client receives material.
2. To supply multiple responses during the client's request for material.
3. To reduce clerical errors by replacing repetitive manual procedures with more accurate computer processing techniques.

ACQUISITION: OBJECTIVES OF AUTOMATION

1. To facilitate information processing (including acquisition, selection, cataloging, abstracting, indexing, and data entry).
2. To render services (including reference, referral, circulation and document loan) more quickly and thoroughly.
3. To produce informational materials (including annotated and unannotated bibliographies).
4. To aid in information analysis (including literature reviews and state-of-the-art reports).

RESERVE/LEARNING RESOURCE CENTER: OBJECTIVES OF AUTOMATION

1. To provide access to curriculum syllabi.
2. To inventory reserve section materials.
3. To compile statistical data of users.

The areas highlighted thus far are intended to be an illustration of what automation can do for university libraries in Southern Africa. This list is not intended to be exhaustive.

DATA COLLECTION

To insure the orderly collection of data prior to the arrival of the computer system, the following steps need to be taken. Special attention is given here to the reserve/learning resources and the circulation sections with the basic assumption that these areas will be given higher priority in the initial stages of automating the library.

A comprehensive course file made up of all courses taught at the universities must be compiled. All of these entries should be coded using the HEGIS taxonomy (a classification system frequently used to categorize university course levels) and listed under the appropriate division heading. If this classification system is used, the compilation will be ready for computer input when the system arrives.

Regarding circulation, it is strongly suggested that the project utilize the services of expert librarians and information scientists in Southern Africa who have been involved in and fully understand the problems and potential of this aspect of the libraries.

PLANNING FOR COMPUTER ACQUISITION

It will be necessary to describe in some detail precisely what data is to be collected and used, as this will be a determining factor relative to the type and size of computers needed. As competitive bids will be solicited from many firms, it is imperative that each firm base its bid on a standard set of data processing requirements. In an effort to describe the data that is needed, tentative parameters for information processing have been developed. It is stressed here that these parameters were developed for bidding purposes, and they should be checked against the operational needs of the libraries in question. For information on these data base parameters, see the OCLA (Ohio College Library Circulation) reference guide (**Exhibit 2**).

COMPUTER ACQUISITION

In the course of evaluating the numerous bids that are submitted by computer service firms and computer vendors, many criteria must be taken into account. Principal among these are cost, manpower requirements, availability of maintenance personnel and parts, testimonials of other local users, computer languages available, software (computer programs) provided, the level of systems development provided by the vendor during the first year of operations, the potentiality of upgrading the system should the demands out-weigh the predicted needs, and the merits of a batch processing system as compared with an on-line system. This latter criteria may be worthy of a brief description.

A batch processing computer system operates in much the same fashion as the Postal Service. If you send a letter to your brother in New York, you may choose to drop it in the mailbox nearest your home (data input). Here it will wait with other letters until the Postman makes his daily pickup. He then carries it to the post office where it is sorted and it finds its way into a bag with other mail bound for New York. Again there is a waiting period while a batch of mail is collected in the New York pouch. It is then placed in a truck destined for the airport. When it arrives in New York, another wait ensues before it is sorted once or twice before the carrier puts it in his bag for delivery. The significant factor here is that at no point after you have placed your letter in the mail box (data input) is it possible for you or your brother to gain access to the information in the letter. You must wait until it is delivered.

An on-line computer system is perhaps analogous to a communications system using a space-borne satellite. Your message is flashed to the satellite which immediately routes it to its destination, which may be one or a dozen different cities. In an on-line computer system, once the data is put into the computer, it is instantaneously available to dozens of interested users.

The output of a batch processing system is a report generated by a printing device, and you often have to wait a day of more for the answer you are seeking. An on-line system may use a printer, but the primary method of access is a television-like monitor with a typewriter keyboard. You ask your questions via the keyboard and in a matter of seconds the answer is flashed on the screen in front of you.

ED 255 213
Report on Library Related Microcomputer Use. Jaffe, Les; and others, California Univ., Berkeley, Report prepared by the Microcomputer Task Force -- University Libraries 35p, 1984
This task force report on current and anticipated needs relating to the use of microcomputers in libraries on the University of California, Berkeley, campus is intended to serve as a fundamental document, the basis for future discussion, planning and development. The task force divided into two groups to consider the issues of staff use of microcomputers and library support of public uses separately. Following weekly subgroup meetings from August through October, 1984, the task force reconvened to assemble this report, which is divided into two major sections: (1) staff use (including training, computer applications, communications, coordination, scheduling, supplies, maintenance, and security), and (2) public use (including reference, online catalog, library instruction, online database searching, circulation, course reserves, collection development, and new services). Each section consists of discussions of issues and options followed by specific recommendations. A summary of the combined recommendations from these two sections makes up the final section, Electronic mail is referred to generically throughout the report. Appendices include various relevant documents, notably a report on microcomputer uses in subject specific and branch libraries.

ED 251 100
Automated Acquisitions in ARL Libraries. SPEC KIT 44. Association of Research Libraries, Washington (DC), Office of Management Studies. 1978, 103p.
Results from a 1978 Association of Research Libraries (ARL) survey on planning for, and conversion to automated acquisitions systems, and the effects of such systems on library operations and use, organization and staffing and management information, indicate that 38 of 77

responding libraries had instituted some kind of automated acquisitions. As with circulation systems, most libraries report that automation has helped standardize processes and has resulted in more efficient use of staff, but few libraries report reduced costs for processing as a result of automated acquisitions. The kit comprises: (1) a survey response analysis; (2) planning documents on an integrated approach from Cornell University and for a commercial system from Florida State University; (3) descriptions of system use in a single library from University of South Carolina, a statewide system from Rutgers University, and a commercial system from University of Southern California; and (4) examples of evaluation methods in single libraries from Syracuse University and Virginia Polytechnic Institute and State University, in a multi-library accounting system from University of California at Santa Barbara, and in a statewide system from Notre Dame University. A list of ways whereby automated acquisition systems have met and not met expectations is included in the summary of survey responses.

ED 251 099
Automated Circulation. SPEC Kit 43. Association of Research Libraries, Washington, DC. Office of Management Studies. 1978. 112p
Of the 64 libraries responding to a 1978 Association of Research Libraries (ARL) survey, 37 indicated that they used automated circulation systems; half of these were commercial systems, and most were batch-process or combination batch-process and online. Nearly all libraries without automated systems cited lack of funding as the reason for not automating. This collection of documents comprises: (1) a detailed survey response analysis; (2) four planning documents including a systems analysis and design study from Colorado State University and a project definition from University of Wisconsin/Madison; (3) two descriptions of conversion activities from Iowa State University and University of North Carolina; (4) two reports from Rutgers University on the effects of automated acquisitions on library operations and staffing (one concerning staffing

requirements); (5) four descriptions of uses of systems management information for library use studies and collection development purposes, one from Virginia Polytechnic Institute and State University, one from University of Connecticut, and two from Washington University; and (6) three policy statements on confidantiality and access to circulation records, from University of Michigan, Iowa State University, and Rutgers University respectively. This collection is introduced by a concise summary which discussed conversion and training; effects on organization and staffing, library operations and use, and management information; and general systems evaluations.

EJ 308 637
Management Problems Arising from the Introduction of Automation. Francis, Simon, *Electronic Library;* v2 n1 p25-29 Jan 1984
Relates problems prompted by implementation of online circulation and cataloging systems in Polytechnic of North London's Library Service. Conversion of records from former card catalog to computer file and organizational problems (position of central technical services unit, position of library service in total information handling structure of institution) are highlighted.

EJ 307 169
A Geac Local Area Network for the Bobst Library. Persky, Gail; and others. *Library Hi-Tech;* v2 n2 p37-45 1984
Provides detailed description of New York University's Bobst Library Local Area Network (LAN), which was designed and implemented by Geac Computers International technical personnel and NYU library systems staff. Definitions of terminology, why the library installed a LAN, planning, network installation, and the LAN configuration and experience are highlighted.

EJ 307 076
LIAS--Library Automation with an Integrated Design. Cline, Nancy, *Library Hi-Tech;* v1 n2 p33-48 Fall 1983

Through a single computerized system, the Libraries Information Access System provides interactive, integrated access to a range of information functions in support of services meeting both academic needs (bibliographic access for research, instructional support) and administrative needs (processing, inventory control, communications, record keeping) at all Pennsylvania State University libraries.

EJ 291 963
Automation, Resource Sharing, and the Small Academic Library. Miller, Arthur H., Jr. *Catholic Library World;* v55 n 5 p209-11 Dec. 1983
Discussion of Illinois' experiences in library cooperation and computerization (OCLC, Library Computer System, LIBRAS) describes use of library materials, benefits and drawbacks of online networking, experiences at Lake Forest College (Illinois), and six tasks recommended for small academic libraries as preparation for major changes toward automation. Six references are included.

EJ 286 928
Participative Planning for Library Automation: The Role of the User Opinion Survey. Anderson, Paul M.; Miller, Ellen G. *College and Research Libraries;* v44 n4 p245-54 Jul 1983
Discussion of the user opinion survey conducted by University of Cincinnati Libraries to aid in the participative planning process for library automation notes methodology, instrument design, distribution, analysis, feedback, rate of return, use of current record systems, sequence of automating record systems, and suggestions. Fourteen sources are provided.

EJ 276 773
Attitudes Toward Automation/Innovation in Academic Libraries. Luquire, Wilson. *Journal of Academic Librarianship;* v8 n6 p344-51 Jan 1983
This study of 23 academic libraries investigated variables which affect (and to what extent they affect) librarians' perceptions or evaluations of OCLC as an innovative

system. Job security was identified as the single most important factor in technological change. Hypotheses of the study and the survey questionnaire are appended.

EJ 276 781 IR 511 036
Suddenly Last Decade! Automation Arrives. Epstein, Susan Baerg *Library Journal;* v108 n3 p183-85 Feb 1, 1983
Discusses concerns of librarians entering field of library automation emphasizing issues surrounding automated circulation control systems and online catalogs. Factors which have contributed to dramatic growth in these areas are enumerated: MARC II format, reduced computer costs, commercial vendors, scarce resources, and turnkey systems.

EJ 276 760 IR 511 015
How to Integrate and Manage New Technology in the Library. Becker, Joseph *Special Libraries;* v74 n1 p1-6 Jan. 1983 (Reprint UMI)
As technology permeates the special library, new requirements will emerge to integrate staff, equipment, and systems and establish connections between information resources and people. Being library managers in special libraries of tomorrow means mastering fundamentals of cost accounting, strategic planning, technological change, and behavioral science. Four references are cited.

PART 1: SECTION 3

POLICY AND PROCEDURE FOR ESTABLISHING AN INTERLIBRARY LOAN SYSTEM FOR INFORMATION SHARING IN SOUTHERN AFRICA

Universities in Southern Africa have not given the interlibrary loan (ILL) concept the seriousness it deserves. This presentation is intended to provide a conceptual framework to show how the interlibrary loan concept can be put into operation. The aim is to provide a practical framework that will enable every university library in Southern Africa to participate in the interlibrary loan program. It is hoped that this manual will serve as a catalyst in the creation and development of interlibrary loan programs.

This procedure manual examines the intricate process of procuring needed information/items for students and researchers both within Southern African universities and from external library/information resources available throughout the world.

WORKING DEFINITION OF AN INTER-LIBRARY LOAN OFFICE

The following operational definitions are considered most appropriate for Southern African universities:

> *"Interlibrary loans are transactions in which materials are loaned by one library to another for short time periods, making available for research and serious study materials not owned by or immediately available to the borrowing library. The lending library decides in each case whether a particular item should or should not be provided. An interlibrary loan is a transaction in which library materials, or a copy of these materials, are made available by one library to another upon request."*
>
> (National Interlibrary Loan Code, American Library Association, Reference and Adult Service Division).

The ILL office would provide a linking mechanism for resources within African universities and resources

that exist outside the confines of the university libraries. ILL would provide ready access to information retrieval from other university libraries.

MANAGEMENT STRUCTURE

The ILL office would utilize a team approach in conducting the daily functions of the office. An interlibrary loan librarian and a technician would be assigned to this office. However, should a problem arise at any time that cannot be resolved by the assigned individuals, reference librarians could be consulted.

More specifically, the interlibrary loan librarian's primary role is lending to, and borrowing from, other libraries. The library technician performs a vital role in this office. His or her responsibilities are to monitor and record all transactions of the ILL office and to keep track of the flow of borrowed and loaned items. The team approach permits the interlibrary loan librarian and the technician to be interchangeable in their roles whenever circumstances necessitate.

SCOPE AND LIMITATIONS

Unlike traditional interlibrary loan operations that are housed in a library environment, ILL may operate as a separate entity from the library. It may have its own designated premises outside of the library complex. A casual observer may question the feasibility of ILL operating at a distance from the parent library. However, the state-of-the-art automated systems that are currently operating in ILL offices and libraries, coupled with electronic mailing and communication networks, enable the ILL to operate successfully, independent from the library. Indeed, this separation gives ILL greater visibility and puts it in the forefront of the demands and challenges of the electronic age.

ILL as an office can no longer be entirely dependent on its parent library as a source of reference. ILL's scope must be broadened. The ILL office must be given wider

recognition as a separate functional entity, capable of exploring the information needs of its user community. The ILL can do this in ways that best combine the human factor in information gathering with the available modern technological devices for expediting retrieval and procurement of needed information.

A limitation that currently exists (though it is less and less evident) is the need for the professional to adjust to a decreased reliance on the parent library as his primary resource. New and innovative strategies for securing knowledge from a proliferation of information resources in the area must be developed.

ROUTINE ILL FUNCTIONS

As expected the ILL office's daily functions comprise a wide variety of tasks that range from manual tasks to problem solution. The following is a discussion of some of the procedures for making and fulfilling requests.

THE ILL LOAN FORM:

In literally all instances, requests made to the ILL office through the mail are submitted on the standard American Library Association (ALA) ILL form. These forms must be typed and mailed or hand-delivered to participating libraries.

Information requested on ILL forms include:

a. Author--type full name, last name first. Initials are avoided if possible.
b. Title--do not abbreviate if possible. The last few words of a long title may be deleted.
c. Date of publication is typed if known
d. Journal articles--full journal title is entered, along with article title, page number, and date. Copyright compliance is indicated on the bottom of the form.
e. Sources of reference should be indicated, especially for journal articles; book references need not be identified.

f. Patron information including full name, mailing address and telephone number.

Exhibit 3 shows a copy of the Library of Congress' ILL request form. A creative adaptation of this form is used extensively by ILL offices around the world.

When the request arrives, the record is pulled from the "requested item" file and is logged in the "master" file. The requested item is then forwarded to the patrons.

If the request is for a photocopy of an item, the record is dropped when updating the "master" file.

If the requested item is a book, the record is kept in the "items borrowed from other libraries" file until the book is returned by the patron.

Upon request of the borrowed book its status is updated in the "master" file and the record is placed in the "discharged" file.

TELEPHONE REQUEST

The ILL office maintains an open line for telephone requests from other libraries and researchers. The office uses a form that is designed to register the most important aspects of a telephone request with a built-in follow-up mechanism to assure that clients are supplied requested items when available. What follows is the general procedure for a request placed through the telephone.

The ILL office picks up a telephone and identifies the office by saying, "This is the ILL office. Can I help you?"

The patron responds by identifying himself and stating who he is affiliated with and the nature of his request.

In many instances the conversation between the ILL officer and the patron takes the form of a reference call

in that objective clarification of a citation and its accuracy becomes the prime objective.

Courtesy is given to all patrons regardless of their affiliation, and the primary objective of processing a request is always the main focus in telephone requests.

To minimize time while maximizing the degree of accuracy given each request placed over the telephone, information pertaining to the following indicators must be solicited:

- date of request
- the library the requester represents or is affiliated with
- name of the requester
- the requester's telephone number of address
- author of requested item
- title of requested item
- verification of the source if possible

After the telephone request is made, it is logged into the ILL office master file to maintain a statistical record of the request and to allow the search process to be activated. This process requires the following steps:

- - The citation is verified through available reference sources.

- - Upon receipt of the ILL form the requested information is then released after being logged into the "master" file.

- - The ILL form is attached to the "telephone request" form and filed in the ILL office transaction box.

- - If the request is for a photocopy, it is regarded complete when it is mailed to the patron and the record is filed under the "discharged item" file discussed in detail in another section of this manual.

- - If the request is for a book or other items that must be returned, the record is kept in the transaction box until it is returned. Then the record is transferred to "discharged items."

- - All telephone requests that are not filled after the verification of the citation are put into the "discharged terms" file.

- - It is important to note that all telephone requests are given the same priorities as requests that are placed by mail.

ILL OFFICE AS BORROWER

Upon receipt of a request that cannot be accommodated through the main library catalog or other pertinent sources. The following steps should be taken.

1. Identify the sources which have the needed item in their holdings.
2. Select the most appropriate source that can be supplied.
3. File the request in the requested item file until the item is made available.

ILL OFFICE AS LENDER

Libraries throughout Southern Africa which already have access to an ILL office may increase their use of the system by acquiring catalogs of the holdings of other libraries. Following, is a brief description of the process for recording the elements requiring attention in any given transaction.

1. A copy of the record is retrieved from the printout.
2. The record is logged into the ILL office "master log" file.
3. The citation of the records are then verified for accuracy and checked to determine whether the library has the item and if it is available for circulation or not.

4. Requested items that cannot be supplied due to non-circulating status or other intervening variables such as "in circulation," "missing," "reference material," etc., are immediately updated as "NO" in response to "Can you supply?"
5. Requested items that cannot be supplied are discharged from the "master log" file with accompanying reason for failure to supply.
6. In nearly all instances, books, pamphlets and reports are to be returned, but photocopied items, such as articles, duplicated forms, or copies made from micro-fiche/film are not expected back.

Transactions done through the ILL office rely heavily on identifying the role that the ILL office has to assume for each record that filters into the system. Borrowing and lending are at the epicenter of the ILL system's operation and design. Accurate record keeping is necessary to facilitate this process of borrowing and lending. The following is an examination of record keeping procedures to meet the needs of the ILL concept.

PENDING: This category refers to incoming requests that have not yet been processed.

IN PROCESS: All requests that are in the ILL transaction process are placed under this section until the outcome is determined.

CONDITIONAL: Requests that have been processed but are still at an indefinite state.

UNFILLED: Requests that have not been filled by libraries where requests were made are funnelled through this section.

SPECIAL MESSAGE/LENDER: All the messages pertaining to the lending process are channelled through this subsystem for problem solution.

SPECIAL MESSAGE/BORROWER: All the messages pertaining to the borrowing process are channelled through this subsystem for problem solution.

WILL SUPPLY: This section contains the responses regarding requests made and their current status.

SHIPPED: This section of the system includes the status of requests that have been shipped.

RETURNED: This section contains the status of requested items as they are returned.

RECORD KEEPING

The record keeping within the ILL office is important as a monitoring device for nearly all the transactions associated with the office. This section provides a detailed account of record keeping through such systems as: the master file log, the supportive record system, the circulation system, overdues and renewals, the mailing system and the time of the request.

THE MASTER FILE LOG

The ILL office maintains a master file for all requests that are handled by the office. Without exception, all requests, whether for lending or borrowing, are recorded in the master file. Following are the key elements utilized in keeping an accurate record:

- date request is received
- name of requesting item
- title of requested item
- return due date
- postage paid
- date returned or copy sent
- renewal or rush

DATE REQUEST IS RECEIVED: Every request that comes to the ILL office by telephone or mail must be logged in at its point of arrival.

NAME OF REQUESTING LIBRARY: Under the indicator, the specific name of the point of origin of the requested item is identified and recorded.

TITLE OF REQUESTED ITEM: Each request is identified by its own unique title. This section insures that consistency in title is maintained in record keeping. In most cases, no more than three of the first words of the title are recorded. When a title is derived from an article, the journal/periodical name is also recorded as an integral part of the title.

RETURN DUE DATE: This section is only filled when the requested item is due for return. In most cases books that are being lent or borrowed from elsewhere are assigned a due date. Items that are photocopied, or duplications of micro-fiche/film, are not taken into account in this section.

POSTAGE PAID: Each request that is mailed through a mailing system is recorded.

DATE RETURNED OR COPY SENT: Data is maintained when items being loaned or borrowed are returned to the ILL office.

RENEWAL OR RUSH: When a request is made of an item that has either been loaned or borrowed, its status is recorded. The ILL office pays particular attention to renewal and rush orders. These two elements are important because requesters require information when it is vital to their needs. In addition, libraries that lend materials are always concerned that items are returned within the specified time frame.

CIRCULATION SYSTEM

The circulation system for the ILL office requires close cooperation between the ILL office and its parent library. Because of this, it is important to highlight the following concerns.

- Excluded from interlibrary loans are certain types of material (e.g. non-circulating reference books, exceptionally rare or classified literature and current journals).
- Libraries should have available, and make use of, the index and bibliographic tools required to fully identify resources that may be wanted from other participating libraries.
- Loans will be made to other libraries, but not to individuals.
- Interlibrary loans circulate for two weeks, though renewals sometimes may be arranged.
- Requested government reports are sent on microfiche, on a retention basis, if the borrowing library has microfiche capability.

OVERDUES AND RENEWALS

It is important for the ILL office to keep track of overdue and renewed books which may be loaned from other libraries. Due to this concern the following steps apply to overdues:

1. Every week the ILL staff checks the ILL circulation file and ILL transaction file system for overdue items.

2. One overdue notice is sent each week for 2 successive weeks unless the material is returned.

3. If material is more than 2 weeks overdue, the borrowing library is called and arrangements are made to return the item.

4. When an item is lost, the borrowing library is requested to replace it with a new copy. If it is out of print, material of equal value is requested.

Borrowing libraries may request renewals by phone or mail. Items are routinely renewed no more than twice if a reserve has not been made. Renewals are entered

on the daily "circulation record" sheet with an "R" before the title plus due date.

MAILING SYSTEM

The dependence on mailing requested items is relatively high compared to other delivery systems within the ILL. At present the mailing system in Southern Africa is not reliable. It is hoped, with time, the system will improve to allow better and more efficient mailing. Following is a brief description of the mailing procedure.

INCOMING MAIL: 1) All incoming and outgoing mail is brought to the ILL office mail stand before processing. 2) The ILL technician reviews each piece of mail to determine its content. 3) Mail that pertains to borrowing interlibrary loan items from external sources is immediately logged into the master file and forwarded for processing. 4) Mail dealing with items requested by the ILL for its patrons is also logged into the master file before being processed. In this respect, one can safely say, every piece of mail that pertains to the ILL office is logged into the master file.

REFERENCE SOURCES

This section highlights the reference sources used for providing information to the ILL office. The selected reference holdings are important for locating useful sources for the office. The statistical data kept by the office is also a viable source for monitoring the progress of the office. Evaluation is significant for measuring the outcomes of the office. To follow is a description of each area.

BIBLIOGRAPHIC REFERENCE: The ILL office should rely heavily on reference sources that are pertinent to the holdings of participating libraries for filling incoming requests. These include:

• book catalogs

- publications bibliographies
- microfiche indexes

BOOK CATALOGS: Book catalogs (monographs owned by the library system, 1970 to present in microfiche at the circulation desk). Computer print-out of new titles ordered and received in the acquisition department.

STATISTICAL DATA: The ILL office keeps a record of all its transactions, as discussed in the section on record files. The records kept on a daily basis become a vital source for maintaining useful statistical data. Each month a statistical report is released for inclusion in the operational support progress report on ILL office activities which is presented to the parent library. The record covers major areas of operation that include lending transactions and borrowing transactions.

It is important to note that the statistical data of the ILL office can be utilized as an indicator of the work performance of the office. Also, it is used in making comparisons of the efficiency of the office with interlibrary loan systems elsewhere.

EVALUATION

The ILL office has a built-in mechanism for evaluating its operations through its monthly progress reports submitted to the parent library. The evaluation is based on how well the ILL office meets the guidelines or stated policies of operations. Other evaluation criteria used by the ILL office include the output of work based on monthly statistical data, plus feedback that comes directly from the ILL users. The users' evaluations are always given special attention and play a significant role in improving future services of the ILL office.

EJ 268 669 IR 510 558
Academic Libraries in an Interlibrary Loan Network. Linsley, Laurie S. *College and Research Libraries*; v43 n4 p292-99 Jul 1982 (Reprint UMI)
Presents results of a survey of users of Florida Library Information Network (FLIN), a statewide multitype interlibrary loan network. The paper centers on the role of academic libraries (the heaviest users) and discusses interlibrary loan staffing, request fulfillment, OCLC utilization, network performance and other factors. Eight references are provided. (Author/EJS)

EJ 304 521 IR 512 985
A Brazilian Program for Interlibrary Bibliographic Exchange (COMUT). McLean, Dulce Didio *International Library Review*, v16 n3 p317-22 Jul 1984
Describes a nationwide program designed to guarantee supply of copies of documents, within predetermined terms and standards of quality, using selected libraries and documentation centers throughout Brazil. Details of program to be administered by Brazilian Institute for Information on Science and Technology are outlined in proposal and general information report. (EJS)

EJ 327 032 IR 514 718
GRATIS: The Cooperative Solution to Interlibrary Loans and the South Australian Experience. Keast, Don; Hooke, Julie *Australian Library Journal*; v34 n3 p35-40 Aug 1985
Describes the growth, rationale, and operation of a no-charge cooperative formed in 1982 by group of small Australian health science libraries to combat rising costs of interlibrary loans (GRATIS), and its South Australian equivalent (GRATISSA). Membership, coverage, features, problems, applications and future developments are noted. Nine references are cited. (EJS)

EJ 325 560 IR 514 602
Research Libraries in an International Setting: Requirements for Expanded Resource Sharing. Dougherty, Richard M. *College and Research Libraries*, v46 n 5 p383-89 Sep 1985 (Reprint UMI)
Examines the roles and structures of several European national lending systems to find useful models for guiding future developments at home and abroad. Highlights include the current scene, growth of union catalogs, patterns of collection use, new bases for measuring performance, and charting a future course. (18 references) (EJS)

EJ 234 706 IR 508 599
Interlibrary Loan Codes and Guidelines. *RQ*, v20 n1 p25-36 Fall 1980 (Reprint UMI)
Presents a model interlibrary loan policy for regional, state, local, and other special groups of libraries; the 1980 national interlibrary loan code, and the 1978 procedural guidelines for international lending. (FM)

EJ 240 917 IR 508 816
International Lending: Principles and Guidelines for Procedures (1978). *Canadian Library Journal;* v37 n3 p181-83 Jun 1980
Describes the principles of international lending and guidelines for procedure, including national centers, requests, supplying, conditions of supply, period of loan, return receipts, responsibility for loss or damage, payment statistics (CHC)

EJ 222 071 IR 507 901
Regional Alternative for Interlibrary Loan: Access to Unreported Holdings. Reynolds, Dennis J. *College and Research Libraries;* v41 n1 p33-42 Jan 1980 (reprint UMI)
A highly structured inexpensive teletype system used by several libraries in western Illinois has resulted in filling about 50 percent of the members' requests for monographs despite a nearly total lack of knowledge of each other's holdings. Recent experimentation with the OCLC

interlibrary loan subsystem shows promise under similar conditions (Author)

PART 1: SECTION 4

THE NEED TO ESTABLISH A CONSORTIUM FOR SHARING INFORMATION DERIVED FROM RESEARCH WORK DONE IN SOUTHERN AFRICA

Southern Africa has enough information resources to supply its own needs if public and private institutions in the area can be better organized (see **Exhibit 4** for a graphic illustration of the current uncoordinated status of information resources in Southern Africa). Partially as a response to the need for better organization of information resources, the proposal for a consortium as a resource has come to be the main idea behind the proposed consortium to be discussed extensively in this presentation.

The expression "Information Resources Management" (IRM) is coming into use to describe both the content of papers, books, files, data bases, etc. (i.e., the data itself) and the systems to manage the control and flow of the information media . The true value of information, however, is measured by how it provides for effective use of other resources (human, material, financial).

Information Resources Management (IRM), therefore, is a methodology for handling information that provides for the efficient and effective use of available resources. It is important, however, in the system design, to remember that IRM, although primarily concerned with the content and substance of paperwork, must provide for the physical handling of the information media; that is, the collection, storage, and retrieval of paper, film, and other media. The physical handling of the information media, however, must not become an end unto itself with inordinate attention being paid to the system instead of the application or the use of the information.

The U.S. Commission on Federal Paperwork in A Handbook for Managers stated that resource management, including IRM, seeks:

- To maximize the value and benefits from the use of the resource in achieving goals and objectives.

- To minimize the cost of acquiring, processing, using, and disposing of the resource.

- To fix the accountability for the efficient and effective use of the resource.

It is in this dual context of information, both as a resource and as a means for providing for the efficient and effective use of other resources, that a consortium is proposed which would be capable of managing an information system which would be able to properly handle material produced and research done within Southern Africa.

There ought to be a pooling of resources and a coordinated response to agricultural information needs in Southern Africa. Impressive resources are available in local research institutions which can quite effectively serve Southern Africa's information needs, if managed and shared properly among the institutions.

In order to implement an operational system for managing information generated in Southern Africa, it would be essential to establish a consortium as a basis for information sharing. The consortium should be an open structure that invites any institutions, organizations and other research-oriented bodies to join in the formation of a network. The consortium would function as an information system with components for documentation, clearing-house activities, maintaining informa-tion growth, and nurturing the development process.

The motivating element to membership would be an interest in, and dedication to, providing useful and accurate information that will help to bring solutions to problems of development, particularly in those Southern African regions with little or no previous information capacity.

In addition, the consortium would be able to meet additional information needs in Southern Africa, other than those pertaining to collection. For example, the consortium could also function as follows:

- To support creative change within its membership.

- To facilitate and support new information enterprises and programs addressing the needs of Southern Africa.

- To develop and implement cooperative programs and projects among its members.

- To provide a meeting ground for a diversity of people, institutions and agencies with common values and purposes.

- To provide a forum for the exchange of ideas among its members associates.

INFORMATION SYSTEMS

An Information system is defined as a system including the following three basic components:

1. Information users: researchers, faculty members, students and others.

2. Information resources in any form: including published and unpublished materials, and various organizations and agencies.

3. Mechanism interlinking the above two components: a library-type institution for coordinating activities.

The consortium would establish an information system that would be comprised of the above mentioned components. Information obtained for the system is to be analyzed on the basis of accumulated facts and theories in the given subject area by the coordinators of the information system. After the analysis is made, the following tasks must be carried out in order to establish and maintain the information system for optimal use by the user community.

- Compile a directory of available information from the participating institutions on special subject areas.

- Produce "bibliographic" reports as shown in **Exhibit 5** for the user community.

- Implement the quickest, most cost efficient means of disseminating the holdings to other parts of Southern Africa when needed by potential users.

MICRO-COMPUTER USE FOR INFORMATION SYSTEMS

Because of the volume of materials that are independently produced in Southern Africa, and the need for greater access to these materials, it is envisioned that the utilization of micro-computers in the process of data management is inevitable. The sheer number of documents available through participating institutions in the consortium information system may increase to a point where direct entry through a large mainframe computer will be too slow. Micro computers provide the flexibility of relative low cost, mobility, and increasing user friendliness, which when tied into a mainframe computer by means of telephone lines or by the physical transfer of data storage disks have the potential to greatly increase the scope of the database and its usability. The mainframe may then serve as a central information storage facility which may easily be accessed by micro-computers at different locations. Thus it is important to discuss the role of micro-computers within the context of the anticipated information system.

Some of the capabilities of micro-computers within an information system are as follows:

- Support text search of special collections that are indigenous to Southern Africa from participating institutions in the consortium.

- Evaluate input data for the directory file and generate bibliographies.

- Provide on-line interactive data bases which may be accessed from external computer terminals.

- Support multiple on-line users.

- Contain system processing control programs to insure quality control.

- Contain generalized information processing functions.

SEARCH AND RETRIEVAL

A system capable of supporting on-line database searches and retrievals using micro-computers should be given consideration. The on-line search function must include the capabilities outlined on the previous page.

Retrieval options must include the ability to display user-selected information on a terminal and the ability to direct the system to print selected information on an off-line printer. The system must be capable of supporting selected dissemination of information, and generating bibliographies and directories on-line for the appropriate files.

In light of the environmental constraints that exist, the information system software must be durable and have a tested record of application in a developing nation. It is out of this concern that an information sharing system called MINISIS was developed. MINISIS has proven to be very well designed, and is strongly recommended for utilization in a project of this size and magnitude.

To follow is a description of MINISIS, a proto-type computerized system that could be utilized by the consortium.

MINISIS is a Hewlett-Packard micro-computer based system developed by the International Development Research Center (IDRC). Because of IDRC's interest in fostering inter- national cooperation in the information field, particularly in developing countries, they have an

on-going program to continuously maintain and improve the system and make it available for use by others. One application of MINISIS that illustrates its usefulness was its use in the Pan African Documentation and Information System (PADIS).

Since MINISIS has become an integral component of PADIS it would be advisable for any anticipated information system in Southern Africa to be designed so that it could eventually interface with such databases at some point in the future.

It is recommended that, once the detailed system design specifications for the implementation of the Consortium Information System on-line database are completed, they be reviewed by a technical support group from a MINISIS operation to determine the feasibility of implementing the pilot project. Major considerations to be addressed during this process include:

- Sufficient hardware support availability.
- Level and amount of technical support required to implement the automation of the system. Database and the amount and timeliness of staff availability within the support group.
- System ability to disseminate information to the user whether on-screen or by way of a hard copy.
- Level and amount of documentation required to support the system that is not currently available.

Final system selection should be based on the hardware resources available, timeliness and cost of technical support, and the overall cost of implementation for each system.

PROGRAM DESIGN

One university should be selected to take the lead in forming a consortium of research institutions capable of

responding to the needs of the target region on identifying initial areas of cooperation and specific projects to be undertaken. In doing so, the library of the university will be addressing the functions that are spelled out in the consortium section of the presentation.

The format of the program would be structured to: (1) inventory the strengths of institutions in Southern Africa, (2) identify areas of cooperation and specific projects to be undertaken, and (3) formalize the consortium.

THE INVENTORY

The process of taking inventory of the strengths of the consortium may be significantly dealt with by organizing a meeting of representatives from all the groups which make up the consortium. This meeting should seek to establish:

- Areas of research strengths.
- Percentage of accumulated information materials indigenous to Southern Africa.
- Desire for research opportunities.
- Degree of interdisciplinary interest in research done on specific topics.

In order to assure the complete and accurate compilation of this information a survey should be conducted prior to the first major meeting. Such a survey would be a thorough inventory of institutional strengths. Participating institutions are thus pre-disposed to respond promptly and completely to the inventory.

THE RESEARCH PHASE

The inventory to be conducted will provide information essential to a meaningful planning dialogue for

the intended consortium members. An exploration of possible areas of interest in specific areas of information sharing should be a major concern. This research phase is the sine-qua-non of the consortium's efforts. If viable projects and commitments are not secured at this stage, further efforts are pointless.

IDENTIFYING AREAS OF INTEREST

When the inventory survey is completed and a meeting is held on the consortium's aims and aspirations, the next step is to identify specific areas in which members of the consortium can have an immediate input into the system. When the type of information is made available from the participating institutions it can then be entered into a directory file which will be made available to all the institutions.

EJ 275 124 SE 532 798
Research Libraries--Automation and Cooperation. McDonald, David R.; Hurowitz, Robert *Perspectives in Computing;* v2 n4 p4-11 Dec. 1982
Research Libraries Group (RLG) is a corporation owned by 26 academic libraries in the United State. To accomplish their goals, RLG maintains a computerized library services system known as the Research Libraries Information Network (RLIN). The RLIN system (and subsystems) design considerations, functions and benefits for RLG members.

EJ 089 736
In Library Networking: Current Problems and Future Prospects Bearman, T.C. *National Commission on Libraries and Information Sciences* Library Network Projects. Washington, DC. Fall 1983
This article describes the current projects of the National Commission on Libraries and information Science in the networking ares. Cooperation with the Network Advisory Committee with the Library of Congress in expanding its membership is described. Issues which confront the NCLIC include reexamination of the appropriate roles of the various stakeholders in the public sector of information networking, continuing to assist Congress on the revision of LSCA, and finally, continued use of symposiums to keep discussion on issues and problems active.

Practical Information Networking: An Experimental Design for Early Development of National Information Services Murdock, John W.; Sherrod, John. *Informatics, Inc.* Final Report, Aug 1976. Rockville, MD 195p.
This study is concerned specifically with making information resources and services immediately available to managers and planners of new federal programs that respond to legislation on national issues, functional structural and procedural models of information systems, services and resources are used to develop guidelines for

selecting the most promising combination of information activities for rapid use. One of the major assumptions is that once the information need is upon the manager, the time for conceptual planning is past. This is an initial study proposing only a model approach. It is not intended to provide a definitive answer.

Technology Assessment of Information Nerworking Technology. Penniman, W.D. Dec. 1986 Final Report, *Battelle Columbus Laboratories*
The major objectives of the Battelle Mini-technology assessment were as follows: 1) Identify and assess the major technical, socio- political, legal, and economic forces which can influence the future evolution of S & T/R & D Information networks in the 1975-1955 time period; 2) identify and assess the effects of evolving S & T/R & D networks and society in the 1975-1985 time period; 3) Outline major policy considerations and discuss their implications; and 4) make recommendations for future in-depth studies. Basically, Battelle's approach was to: 1) Focus on structuring the problem for future in-depth assessments of information networking; 2) identify elements internal to information networks that would impact on various segments of society; 3) identify elements of society that impact on information networks; 4) structure the relationship between these elements to look for lines of influence or impact; and 5) review the results in order to extract policy implications.

Educating for Integrated Resource Management. Schoenfeld, Clay *Environmentalist,* v1 n2 p117-22 Sum 1981
Proposes the establishment of Integrated Resource Management Education Centers that would provide information and assistance to local change agents involved with resource management policies and plans. Identifies the purposes, programs, and intended audience for these centers, their roles in developing countries, and some existing prototypes.

VITAL AREAS OF INFORMATION NEEDS IN SOUTHERN AFRICA

PART 2

PART 2: SECTION 1

SOME ASPECTS OF INFORMATION AND REFERRAL SERVICE TO BE CONSIDERED BY ADULT AGENCIES IN SOUTHERN AFRICA

Information and referral services that are timely, valid, and reliable are going to be needed within adult education agencies in Southern Africa. The expected function of such a social service information system would be to provide information and referral for their clients' basic needs, be they social, political or economic.

Information and referral services within adult education agencies can be powerful organizing tools in changing the outlook of these agencies by integrating educational opportunities, community services, and cultural and recreation resources. It is anticipated that adult education agencies can assume responsibility either on their own, or in cooperation with other community agencies designed to render information service to assist their clients in meeting their information needs.

This presentation deals mainly with the structural aspect of information and referral service, and the appropriate definitions that are most suitable for establishing such a function within adult education agencies in Southern Africa. Equally important are the difficulties inherent in the establishment of information and referral service

ESTABLISHING AN APPROPRIATE DEFINITION FOR INFORMATION AND REFERRAL SERVICE

There is a tremendous amount of information on the subject of information referral service. Despite this, one problem arises: the fact that "information and referral service" is a very broadly defined term. That is, it is used in many disciplines, and with multitudinous definitions. Moreover, in the field of adult education the term is relatively new. The idea is not clearly defined nor is it dealt with adequately. Studies that fall within the domain of adult education have often addressed themselves in a rather general manner to information service for adult education programs in progress. When more specific, they tend to focus more on information service as it pertains to welfare agencies or library settings.

In order for adult education agencies in Southern Africa to adopt information and referral services as part of their functions, the following elements should be considered:

- A clear definition of the aims and objectives of an information and referral service has to be developed
- A strategy to link the clients affiliated with adult education agencies with whatever services, programs, and resources they may need must be formulated
- Pertinent information from available sources will have to be acquired, analyzed, and translated into usable knowledge for client consumption.
- An attempt should be made to ascertain that the information provided encourages the most effective utilization by the clients towards accomplishing their educational goals.

STRUCTURAL ASPECTS OF INFORMATION AND REFERRAL SERVICE

There is an enormous amount of literature that addresses itself to the structural aspect of "information service." The literature along these lines can be found in the works of Winifred B. Linderman, Guy Garrison, Alfred Kahn and many others.[1] Their studies focus on the organizational problems that characterize information and referral services but differ because they do not perceive the same priorities for information and referral services.

Adult educators have also addressed themselves on many occasions to information service rendered by librarians. A few of the most outstanding works are those by J. Roby Kidd, Cyril O. Houle, Robert Blakely and John Niemi, to name just a few.[2] The discussion to follow will focus more on some of the structural aspects of information referral service.

Nicholas Long[3] has identified five areas which he says are commonly associated with an information and referral service:

1. *Resource File:* Centers establish and maintain an indexed file of service related information.

2. *Information Provision:* Centers provide relevant service-related information to inquirers.

3. *Referral:* When necessary, center staff actually make contact with a service agency and set up appointments for an inquirer.

4. *Follow-up:* After referrals are made, the center staff contacts both inquirer and agency to ensure that the referral was appropriate.

5. *Escort:* In situations where it seems appropriate, clients may be escorted by center staff through the intake process at other service agencies.

Another model is the one suggested by Alfred Kahn[4] which resembles the model of the British Citizens' Advice Bureau. His model adopts the same guidelines as suggested in Long's Information and Referral model, but it extends to include "advice" and "case advocacy" which he defines as follows:

Advice: In some cases individuals want more than information about what options exist for them. Some people want other opinions about what would be the best choice. In cases like this, center staff can provide information opinions.

Case Advocacy: This is a two–part service for individuals who have wrongfully been denied proper service at other agencies. First, information is provided concerning client rights and appeal procedures. Next, where circumstances warrant, an escort accompanies a client through reapplication or appeal processes to provide support or act as advocate on behalf of the client.

Some of the qualities essential to the structure of an information and referral service have been stated by N. Long[5] as follows:

accessible	accountable	flexible
sensitive	efficient	neutral
reliable	friendly	broad range

Outside the already stated criteria for information and referral service, there are others which seem less complex in structure. For example, Carolyn Forsman suggests that such a service might consist of an easily accessible store-front or telephone community facility where counseling, advocacy, information, and referral service feed into a larger human services network, using para-professional backup when needed, and providing stopgap crisis services until more comprehensive and preventative services can be found.(6)

The simplest form of information referral is one that involves the telephone as the vital element for transmitting information. Such a system was first designed for the aged population, but now it is becoming more popularly used by other social agencies. It was formulated by Virginia Forster[7] for gerontological institutions and entails the following structure:

1. Appoint or elect a chairman

2. Choose a name (Example: Hello Daily, Telephone Reassurance, Telephone Buddies, Telephone Life Line)

3. Develop a plan for the service. Consider: Who will be eligible to receive the service? What will the costs be and how will they be met? Who will do the calling? Who will check the home in case of emergency? How will the elderly learn about the service?

SUMMARY

There is sufficient evidence to be able to state that the area of information and referral services is an

important concern for adult education agencies in Southern Africa.

Despite the number of studies completed in the area of information and referral service, it appears that very little exploration has focused on the aspect of an education program functioning as an information and referral service for its clients.

Adult education agencies in Southern Africa need to generate more studies that deal with the development of techniques and systems for "inventorying" and disseminating information concerning services and resources in the community. It can be useful especially in our present time when Southern Africa is facing tremendous national problems needing solutions.

CITED REFERENCES

[1] The authors cited in this note have written the following works: Winifred B. Linderman. The Present Status and Future Prospect of Reference/Information Service. Crowley and Childres have jointly written Information Service in Public Libraries. Guy Garrison's work is Total Community Library Service. Alfred Kahn is the author of Neighborhood Information Centers: A Study and Some Proposals.

[2] J. R. Kidd wrote Adult Education and the Library in Ontario, Canada. Cyril Houle did a study on Libraries in Adult and Fundamental Education. Robert Blakely is the author of Issues in Adult Education and the Library. Syracuse University Press 1978. Syracuse, N.Y. p 211

[3] Nicholas Long, Information and Referral Centers: A Functional Analysis DREW Publication No. (SRS) 728035 1972 p62

[4] Kahn, A. J. et al. Neighborhood Information Centers: A Study and Some Proposals. Columbia University School of Social Work, N.Y. 1966 p116

[5] Op Cit., N. Long p. 80

[6] Carolyn Forsman. "Crisis Information Services to Youth: A Lesson for Libraries." Library Journal March 1972 p1132

[7] Virginia Foster. "Guidelines for a Telephone Reconnaissance Service." U.S. Government Printing Office, Stock No. 1762-0043, 1972 p9

ED 254 779 CG 018 064
An Information and Referral Model for Improving Self-Help Group Utilization. Wollert, Richard, Paper presented at the Annual Convention of the American Psychological Association 24p (Toronto, Ontario, Canada) Aug 24-28, 1984
This paper describes the Self-Help Information Service (SIS), and summarizes data evaluating the program. Associated with a generally focused information and referral service (I&R), SIS was designed to facilitate research on self-help groups. Its specific goals were to develop and maintain a telephone referral service disseminating self-help group information, and to record the number of community residents interested in joining self-help groups and the scope of their self-help concerns. The I&R provided personnel assistance in exchange for assistance with information collection and dissemination, and record keeping. A Group Resource Inventory (GRI) and a Potential Member Inventory (PMI) were devised to record information from community residents and from self-help groups. The SIS team completed the inventories following a standardized interview protocol. A 3-month information campaign promoting SIS use by community residents was followed by an abbreviated campaign 6 months later. Results of program evaluation indicated that the I&R information base was expanded. A formative evaluation and follow-up of operator and consumer satisfaction reflected high levels of satisfaction. The results indicate that an information-intensive approach is capable of addressing some important issues in the field of mental health.

ED 262 264 CE 042 700
Resource and Referral Service: A Report on Electronic Networks for Educators. Gordon, Ruth; Smink, Jay. National Center for Research in Vocational Education, 112p Ohio State Univ., Columbus, 1985
This report describes the activities of the Resource and Referral Service (RRS), which was established in 1977 as a member of a nationwide dissemination network called the

Research and Development Exchange (RDX), in using electronic networks as part of its dissemination effort. Discussed first are the history and objectives of RRS. The next chapter provides information on various national and state electronic networks, including target audience, content, and contact person. The third section relates the ways in which RRS participated in selected electronic networks between December 1, 1984 and September 30, 1985, and offers guidelines for joining and contributing information to networks. Included in the next section are profiles of 18 national/international and 12 state networks. Each profile contains information concerning some or all of the following: sponsor, cost, target audience, information contact, special features, program content, and start-up date. Appendixes to the guide include ERIC digests on electronic networks and on networking and microcomputers, addresses of agencies and organizations mentioned in the report, a brochure describing RRS, examples of information contributed to various electronic networks, a list of resources, and a list of related readings.

EJ 277 654 CE 513 145
Compact for Lifelong Education Opportunities (CLEO): a Cooperative Project of the Delaware Valley Regional Planning Council for Higher Education. *Journal of Career Education;* v9 n3 p265-70 Mar 1983
CLEO is a telephone referral service that provides adults with counseling, assessment, admissions, and other information about its 38 member colleges. An innovative post-secondary business partnership, it seeks to help adults realize self-directed development goals.

EJ 336 257 JR 515 381
Guidelines for Establishing Community Information and Referral Service in Public Libraries. *Public Libraries;* v25 n1 p11-15 Apr 1986
Presents revision of the original "Guidelines for Establishing Information and Referral Service in Public Libraries," adopted by the Public Library Association Board of Directors on January 22, 1980. The revision

approved on January 8, 1985, reflects changes in terminology and in the information and referral field during the past five years.

PART 2: SECTION 2

THE DYNAMICS OF INFORMATION PROCESSING AND PACKAGING FOR SOUTHERN AFRICA

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The proliferation of information production has resulted in the growth and development of an ever expanding information packaging industry. This area has become so large in size and scope that it is necessary to discuss some of the important developments that are taking place in the area.

The newest phrases now being used in information packaging range from computer tapes, microfiche, teletexts, video discs, magnetic tapes and interactive imaging systems (optical systems) to word processing and the use of laser technology. Southern Africa will not escape this new wave of information packaging. It soon will be bombarded with vendors of these products, to a point where some adaptation will be inevitable. With this in mind, this presentation is intended to provide a brief introduction to some of the developments in information packaging that may be reaching Southern Africa in the foreseeable future.

AUDIO-VISUAL

Audio-visual materials present many different ways of learning and teaching. Different packaging combinations of information materials, space, time, and money can be used to meet the information needs and provide administrative convenience. Audio-visuals enhance communication, and create a sense of reality. They bring distant events closer and compress or expand the time in which a visual or auditory event takes place. Audio-visuals can magnify or reduce the size of objects, dramatize or simplify events, and so forth.

The holdings of the audio-visual library, irrespective of size, can be made readily accessible to the users, if a bibliography of the films can be compiled with the inclusion of the following elements:

- Title with sub-title
- Size and physical description
- Length in minutes
- Stock or color code

- Description of the content
- Series title reference when applicable
- Audience or grade level
- Producer and distributor code
- Year of release
- Library of Congress card number

The information kit is now being used as a convenient way to package information. Its use is frequent and global. It may be defined as a convenient way to provide wider coverage of a specific subject or a large number of subjects. More specifically, the information kit is designed to accomplish the following objectives:

-- To achieve an optimal match of kit information and users for an attainment of greater educational outcome and satisfaction, it is necessary to incorporate their views during the formulation stage of the kit.

-- To package widened coverage of a specific subject and the necessary guidelines for comprehension of the kit information.

-- To package kit information in such a way that it generates self-motivation and individual learning enhancement.

The computer is another vehicle that is being used more rapidly for packaging information. IBM's first marketed commercial models were the 701 and 702. The 702 was the first commercial computer to use the magnetic core storage which had been developed earlier by Dr. J. W. Forrester at M.I.T. Sylvania Electronics was also getting ready to enter the computer market. Today the computer industry has grown so big in size and complexity that it will soon have a direct impact in Southern African regions. Suffice it to say, the whole region will soon be affected by the wave of information technology. Therefore, it will be necessary to understand the full implications of computerized systems of information storage and packaging.

One lucid example of the trend and versatility in packaging of information is a high powered software family that consists of a basic package plus a number of add on options. For example, the *SPSS/PC* (Statistical Package of the Social Sciences) base package contains all data and file handling routines; descriptive, categorical, correlation, analysis of variance and regression procedures; plus report writing, graphing and plotting functions.

Many procedures of SPSS/PC software allow you to determine what data is displayed, and the formats in which to display it. A facility included in the basic package lets you customize your own reports. Many other procedures give you a variety of ways to graphically display your results.

The expanding use of minicomputers deserves at least a short mention here with regard to information packaging. Mini- computers because of their increasing availability and affordability, their expanding capabilities and the ability to provide users with direct access to databanks and information resources, are quickly becoming essential tools in the development of information services. Every year mini-computers become more sophisticated, faster, smaller, more user friendly, and more affordable. The amount of software available for the for these computers is also increasing constantly. Old programs quickly become obsolete as newer, faster, more efficient and more useful programs are developed.

COMPUTER SOFTWARE

Assuring the quality of technical processes and the accuracy of packaging information is becoming an increasingly difficult task. Rapid increases in the volume of information, the sophistication of information uses, and the complexity of material flows and processes are characteristic of most modern technical environments. As complexity increases, the risk of introducing significant errors into material processes increases. The very complexity of such systems makes the detection of error itself a complex task. With increasing frequency, public

and private organizations are seeking help form corporations with experience in quality control and information validation to ensure that technical processes and information packaging meet performance and accuracy standards. The problems associated with quality control and validation can be minimized by following these guidelines:

-- Establish ways of aiding in planning, organizing and controlling software purchasing and development through the following activities.

- Create a directory of software suppliers
- Evaluate the quality of software supplied
- Keep abreast of the state-of-the-art software production.

-- Provide leadership in innovative use of software materials and utilize extensive market research on software before making a major purchase.

-- Establish cost-efficient ways of packaging and designing your own software by learning how to design and evaluate software for your use.

Preparation for these new technologies for packaging information ought to be made in institutions of higher learning. Perhaps it would be timely to introduce some of these concepts in technical institutes in order that future demands imposed by the new information technologies may be met.

EJ 323 029 UD 511 746
The Fingertip Effect: How Information-Processing Technology Shapes Thinking. Perkins, D. N. *Educational Researcher;* v14 n7 p11-17 Aug-Sep 1985
Typical contacts with information-processing technology (IPT) do not significantly reshape thought. Although some suggest that IPT will have a narrowing, dehumanizing influence, the diversification of ITP now underway will allow for more styles of involvement. Because of this diversification, thinking may change as it did in response to literacy and print.

EJ 264 757 IR 510 182
Historical Film Documentation at the Netherlands Information Service. Egeter van Kuyk, R. H. J. *UNESCO Journal of Information Science, Librarianship and Archives Administration;* v3 n4 p227-34 Oct-Dec 1981
Describes the computerized film documentation system being developed for use in the Film Archives of the Netherlands Information Service. The organization of the films by historical periods, the film access system, content analysis of the films, and operation of the film retrieval system are discussed. Four figures accompany the text.

EJ 304 676 SE 536 020
Computer Software for Graphics. van Dam, Andries *Scientific American;* v 251 n3 p146-48, 150-52, 154-59 Sep 1984
Interactive computer graphics is fast becoming the standard medium of communication between computers and all kinds' of users. Reasons for this trend, the technology of interactive graphics displays, software considerations, applications (including classroom and laboratory applications), and future developments are discussed.

EJ 304 675 SE 536 021
Computer Software for Information Management.

Lesk, Michael *Scientific American;* v251 n3 p163-68, 170-72 Sep 1984
Discusses software developed to organize and retrieve electronically stored data, examining structure of the databases in which information is stored and the physical structure of the storage medium. Hierarchical and relational databases, unordered files, B-trees, and storage/software for specific purposes (such as weather, stock market, and geographic data) are considered.

EJ 264 765 IR 510 190
UAP and the New Information Technologies. Martyn, John *UNESCO Journal of Information Science, Librarianship and Archives Administration;* v4 n1 p38-42 Jan-Mar 1982
Describes briefly recent applications of electronics to information processing and information transfer such as facsimile transmission, videodisc and videotape systems, teletext and videotext, word processing, online information retrieval, and document delivery systems. Discusses their relevance to the Universal Availability of Publications (UAP).

EJ 263 463 IR 510 109
Audiovisual Library Partnership in a Tropical University. Crooks, R. D.; Plumbe, W. J. *International Library Review;* v14 n2 p135-42 Apr 1982
Describes the activities undertaken and services provided for the university library by the Audiovisual Unit at the Papua New Guinea University of Technology. The relationship between the AV unit and the library and the types of equipment in use by the unit are discussed.

EJ 321 854 CE 515 895
Converting Software Into Usable Courseware. Klemin, V. Wayne *Business Education Forum;* v40 n1 p21-23 Oct 1985
Presents an outline for creating appropriate courseware from commercial business education software. An example outline is provided to illustrate how a commercial game can be transformed into an educationally sound piece of courseware.

EJ 263 502 JC 502 859
A Laser Technology Program Does Not Start with the Speed of Light. Gebert, John H. *Community and Junior College Journal;* v52 n7 p20-22 Apr 1982
Describes the personnel, equipment, and facilities problems encountered by North Central Technical Institute in the development of a laser technician program and the program's enrollment and job placement rates. Advocates financial support for such programs to meet the national demand for laser and other high technology personnel.

EJ 328 353 IR 514 653
Information Processing, Evaluation, and Utilization: The Role of Academic Libraries in Research and Development (R&D) in Zambia. Lundu, Maurice C. *Information Processing and Management;* v21 n5 p443-57 1985
Analyzes and applies Bettman's information processing theory of consumer choice to information processing, evaluation, and utilization by academic libraries in Zambia to support research and development activities. Certain Zambian cultural and sociophychological aspects and attitudes that could affect the evaluation and utilization of information processed by academic libraries are stressed.

PART 2: SECTION 3

EDUCATION AND TRAINING STRATEGIES TO CONTAIN AND MANAGE THE IMPACT OF REFUGEES: AN INFORMATION SHARING PERSPECTIVE

FROM WHENCE YOU COME, PAIN, BEAUTY, LOVE AND JOY HAVE MINGLED OUT INTO A BLOOM OF SONG! BUT HERE ON EARTH MAN'S SOUL REMAINS THE JOY OF INHARMONIOUS PROCESSES WHICH LONG HAVE RAGED; HERE WHERE OUR YOUTH AND JOYS ARE MOCKED BY WANT AND TEARS, WHERE LIKE THE DEAD, FOUL DUST SHUTS TIGHT OUR DOOR, WHERE AGE, DEEMED WISE, IS ROCKED BY SCOURGE OF FEAR AND HATE!

H.I.E. Dhlomo
A Valley of a Thousand Hills

The words of H.I.E. Dhlomo depict the plight facing refugees in Southern Africa. It seems that we have reached a point in our history when the laws of man are increasingly coming into conflict with the laws of nature, threatening human existence in all spheres of life. Draughts and occasional floods are becoming more frequent. At the same time, self-proclaimed democratic nations of Southern Africa are being guided by superpowers into a state of ideological cold war and economic antagonism with nations that prefer a socialist form of government. This conflict affects the poor in Southern Africa more so than any other segment of society, and has resulted in an unprecedented escalation of refugees.

Given these conditions, how can the host countries of refugees cultivate the support services necessary to aid refugees. This presentation outlines a prescription designed to help refugees adapt to their host countries.

Specifically, this solution involves providing information to refugees to increase their awareness of available resources and to enable them to help themselves This is the quickest and most cost efficient way of acculturating refugees to their host countries and can eliminate the unnecessary proliferation of research studies aimed at ameliorating the plight of refugees in the wilderness of strange lands.

Without the refugees direct involvement in the process of acculturation to their host countries, no

education or training strategies aimed at containing, and managing their impact can be successful. At present, refugees are marginally incorporated into the host society by agencies that provide needed services to refugees. Because of this, it is not surprising to see refugee problems in all spheres of life; and yet, Peter Molotsi, in his investigation of refugees in Southern Africa found the existence of myriad organizations and a host of individuals that have sprung up to address the problems facing refugees (ranging from major international organizations such as the United Nations and its subsidiary agencies to miniscule ragtag groups)

This presentation is based on observations made among refugees in Southern Africa. These comments are not based on an elaborate feasibility study, but on casual observations of refugees and personal experience.

There is a striking absence of pertinent information that might help to bring about a integration of their past experiences with the realities that prevail in their host countries. Equally missing are educational facilities tailored to refugees' needs. To follow is a discussion related to cultural diffusion, information centers, and the education of educators to make them more aware of the plight of refugees.

CULTURAL DIFFUSION

Among the many problems faced by refugees, few are as central or pervasive as finding ways to facilitate their diffusion into the host country. It is essential in Southern Africa not to view refugees as 'prodigal sons lost in the wilderness' but as catalytic agents for change in the host country. They bring a new perspective from another culture. By their very existence, they compel the host country to question its own values and especially to come to grips with the fact that the contemporary world does not guarantee a state of permanence in any given life-style. For refugees from less developed countries, residency in a more developed country enables them to join a more progressive world that utilizes technology to its advantage

without going through decades of experimentation. When improved approaches to agriculture, health care, and other basic human necessities are available, it seems tragic to lose any time in their adoption; or, as sometimes happens, to see their adoption fail.

Despite the proliferation of diffusion studies, attempts to make constructive use of their findings have been limited in number, scope and degree of success. One reason for this limitation in the transfer of diffusion studies from the analytic to the prescriptive mode may well derive from a limitation in most diffusion studies themselves. Despite the title of Rogers and Shoemacher's book, Communication of Innovations: A Cross Cultural Approach, most diffusion research displays a rather low level of sophistication with regard to information and communication. Information science which, as an emergent discipline, was not available to contribute to the preponderance of diffusion studies--has not been used until very recently in even the most rudimentary way to analyze the communication of innovations.

The role of information in accelerating this process has therefore not been analyzed very vigorously or satisfactorily. And yet, when one considers the resources and activities of governments and other agents of change, it is information (its substance, treatment, and method of presentation) that is the variable most under the change agent's control. It is through communication that efforts to promote diffusion can successfully take place. Thus, it seems that the piece of the diffusion puzzle that has been least clarified is the very one that could be best used to design effective diffusion programs. What is more, recent advances in the general understanding of communication and information transfer may contribute substantially to the ability to clarify this important aspect of the diffusion process, and at the same time to turn to practical use the analytic understanding of that process.

More specifically, information regarding the diffusion of innovations should be designed to explore various facets of cultural development associated with such

themes as: self-help schemes, education for relevance, technology and change, the politics of survival, and immigration problems to mention a few. What follows is a discussion of a conceptual framework for information centers which might facilitate the diffusion of information to refugees.

INFORMATION CENTER

Information centers should be oriented toward assisting refugees and functioning as change agents, capable of collecting, analyzing, and sharing information related to the specific needs of the refugees. The information center can be an open structure that invites institutions, organizations, and agencies that are in existence to form a network or clearinghouse for documentation. Such a center would be capable of providing scientific and technical information, not as an end product, but as a means for human change.

The element common to the members of such an information center would be a concern for, and interest in, providing useful and accurate information to refugees in a humanistic way. Equally important is a commitment to the development of relevant information resources to meet their needs.

The staff of such an information center comprises technical professionals that have expertise in information management. These technical professionals would be responsible for identifying, analyzing, and selecting technologies in their respective fields of expertise such as engineering, agriculture, energy, etc., which might be potentially relevant to the particular needs of the refugees. These specialists would also be responsible for documenting, organizing and storing selected information in the most accessible manner. This might involve setting up an information center as a clearinghouse.

Finally, attempts should be made to coordinate the efforts of educators and information specialists and to package information in forms suited to the needs and

literacy levels of the refugees. For this reason, educators would need to be thoroughly familiar with the refugees' problems and needs. Infact, to be most effective, the entire staff of the information center should also be thoroughly acquainted with Southern African refugees and their problems. Educators and technical professionals associated with the information center would work together to facilitate the transfer of useful information to the refugee population. Workshops, seminars, and one-on-one sessions could be used to aid in the transfer of vital information to the refugee population.

The most crucial aspect of this concept of information centers is that they be user-oriented, adaptable to local conditions, and designed to be as accessible as possible to the particular communities they serve. For this to be possible, the staff will not only need to be technically qualified, they must also be conversant in the local languages, and familiar with the culture of the refugees they are serving.

The dispersed locations of these centers in areas where refugees are located is also crucial to their success. Existing international studies at universities, and organizations such as AFRICARE, might be used to coordinate a regional or national network of such centers. Through such organizations and institutions, a central location for a clearinghouse could be chosen to reduce duplication of effort and expense, and encourage resource-pooling. The clearinghouse would devote the bulk of its efforts to gathering as much information as possible on key issues affecting refugees, and make this information available to those who need such information.

However meaningful this suggested approach may seem, unless educators become more sensitive to the needs of refugees, it can bare no fruit. It is out of this concern that the last portion of this presentation looks into the question of educators.

EDUCATING THE EDUCATORS

Obviously, the success of the information center rests ultimately with the individual educators and trainers who are responsible for direct interaction with the users. Educators with the responsibility of training the users of information (in this case the refugees) must be creative and innovative individuals capable of designing training programs that incorporate traditional methods of teaching, new techniques of information transfer, and a sensitivity to the effect the information they are imparting will have on refugees. In short, the trainers will need to have extensive knowledge of the refugees' conditions.

Institutions offering teacher-training for refugee programs will want to ensure that their curricula actually prepare graduates to meet the problems involved with cross cultural information transfer. In this specific area of teacher training, the problem is how to train educators to recognize the human needs and problems of refugees moving from industrialized cultures to non-industrialized cultures, and vice versa. To turn out the best-equipped graduates, curricula should focus on vital areas of refugee needs. A major portion of the program should be devoted to teaching methods of information diffusion and the practical application of technology to the immediate needs of the refugees.

There is a gap that needs to be bridged by institutions of higher learning if they are to focus effectively on refugee needs when designing their curricula. So far there are very few, if any, institutions of higher learning whose philosophy, mission, goals, and objectives are designed to take into consideration the need to prepare educators to teach refugees. For this reason, institutions should consider becoming more cognizant of the following phenomena that confront them:

1. Refugees will increase in number in this world of universal, escalating tensions--racial, ideological, political, and economic. These tensions exist in all continents and on all countries.

2. Refugees, irrespective of their country of origin or their host country, face a world of fantastic change and revolution. The scientific and technological revolution is all embracing and it has set in motion greater changes than all of the ideologies put together.

3. These changes can only be brought to refugee life through a diffusion of culture transmitted through an information sharing process.

4. Refugees, irrespective of their country of origin, cannot escape living in a world where education is a fundamental need. The failure of educational leadership, and indeed all leadership, to harness change and channel education for man's benefit is increasingly evident in today's world. The constructive use of this new-found technological power is an educational challenge of the first order.

CONCLUSION

It follows from this presentation that the problems of refugees in Southern Africa require creative and innovative strategies such as the ones discussed herein. The plethora of international agencies and organizations cannot hope to really help refugees simply by producing endless feasibility studies that rarely come to fruition. Whatever help is rendered to refugees will always be inadequate unless it involves greater participation by the refugees in shaping their own destinies through cultural diffusion.

EJ 245 651 CE 511 509
Refugees and the Need to Understand Their Problems. Tong, Amy *Journal of Home Economics;* v73 n4 p21-23 Win 1981 (Reprint UMI)
Briefly describes the diets of Southeast Asians in their homelands and of refugees in America, their nutritional status, and ways nutritionists can help.

EJ 253 133 UD 508 717
Understanding the Refugee Experience: Foundation of a Better Resettlement System. Stein, Barry N. *Journal of Refugee Resettlement;* v1 n4 p62-71 Aug. 1981
Suggests the need for understanding refugees' characteristics, experiences, resettlement needs, and their patterns of behavior during the resettlement process. Examines consistencies which have been observed in refugee experiences and the process of adaptation to a new society. Treats specifically the conditions of Soviet Jewish and Indochinese refugees.

EJ 253 131 UD 508 715
Refugees and the English Language: A Crucial Interface. Grognet, Allene Guss *Journal of Refugee Resettlement;* v1 n4 p43-50 Aug. 1981
Reviews U.S. language policy as revealed by efforts made to assimilate immigrants in four historical periods. Studies kinds of instruction for new arrivals, specifically the Indochinese.

EJ 332 256 SO 514 861
The Immigrant Student Challenge. Wilson, Angene *Social Education;* v50 n3 p189-93 Mar. 1986
Describes ways in which schools can help immigrant children overcome refugee trauma, differences in language culture, religion, and problems arising because of social stratification and prejudice in American society. Reviews the benefits derived by all students from successful educational practices.

EJ 332 257 SO514 862
Who are Refugees? Frelick, Bill *Social Education;* v50 n3 p194 Mar. 1986
Presents selected results from an April, 1984 public opinion survey conducted by the U.S. Committee for Refugees which revealed a lack of knowledge and negative attitudes among Americans toward refugees. Suggests classroom activities to illustrate the refugee dilemma.

EJ 332 258 SO 514 863
Resource List on Immigration. Egan, Sarah; Parisi, Lynn *Social Education;* v50 n3 p195-98 Mar. 1986
Provides an annotated bibliography of print and audio-visual materials, including ERIC documents, designed to support instruction about immigration in elementary and secondary social studies classes.

EJ 303 040 HE 518 377
The Intellectuals' Migration: The Emigre's Conquest of American Academia. Heilbut, Anthony *Change;* v16 n5 p24-25,32-36 Jul-Aug 1984 (Reprint UMI)
A flow of scientists, artists, filmmakers, poets, historians, novelists, and philosophers driven into exile by Hitler were destined to change the tone of American culture. Some of the most productive work was done in academic settings specifically set up for refugee scholars.

EJ 284 922 UD 510 064
New Perspectives on Immigrant Adaptation. Stepick, Alex *Journal of Children in Contemporary Society;* v15 n3 p15-26 Spr. 1983
Explores the assimilation and acculturation of immigrants into American society. Suggest that while adaptation is a product of various factors, it is less dependent on individual traits than on whether immigrants are incorporated into the primary, secondary and enclave sectors of the economy.

EJ 283 430 UD 510 003
Refugee Resettlement: Models in Action. Lanphier,

Michael *International Migration Review;* v17 n1 p4-33 Spr 1983
Analyzes service delivery, resource allocation, sponsorship, and other practices of programs for Indochinese refugee resettlement in France, Canada, and the United States, according to a model of refugee resettlement that considers two major variables (1) volume of refugee intake and (2) type of adaptation emphasis (economic or cultural).

EJ 282 431 UD 510 004
Rural Development and Urban Migration: Can We Keep Them Down on the Farm? Rhoda, Richard *International Migration Review;* v17 n1 p34-64 Spr. 1983
Provides evidence from migration theories and empirical research for rejecting the belief that rural development interventions reduce rural to urban migration. Suggests that rural to urban migration may be reduced through programs that increase cultivable land, equalize land or income distribution, or decrease fertility.

PART 2: SECTION 4

DEVELOPING A PROTOTYPE INFORMATION RESOURCE FOR A SOUTHERN AFRICAN CENTER FOR APPROPRIATE TECHNOLOGY

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Many of the most pressing problems and needs of a developing Southern Africa depend for their ultimate solution upon the successful infusion of technical information, as well as more obvious resources (money, equipment, etc.). Most conventionally, this need for information is recognized only indirectly, and the need is satisfied primarily through the services of technical and regional "experts" (to the extent that they are truly experts) who carry a certain amount of this information in their heads, and have some ability to locate, in the knowledge bases of their particular specialities, useful information as requirements and opportunities arise.

This method of delivering specialized information is all well and good, so far as it goes, but it must be recognized as only a limited first step toward satisfying developing Southern Africa's needs in the critical areas of technology transfer and social planning. The limitations and drawbacks of the outside expert/client-consumer model are numerous. A major one is that the relationship thus established is essentially a dependent one, with the client government reliant on the professional quality, availability, appropriateness, and integrity of consultants who possess or know how to access the needed information. The possible results of this dependence have been seen time and again in projects which, after apparently successful implementation, disintegrated with the departure of the outside experts who had designed and initiated them.

It seems obvious that the task of development cannot really be adequately addressed until indigenous capabilities are established to access, acquire, and utilize technical information that has a bearing on local problems of development. This statement does not imply the necessity of establishing large holdings of redundant technical documents, data bases, and other resources. A major trend in information resource management, in fact, is to facilitate access to stores of information not in one's direct possession. Capabilities of this sort should be developed and exploited to the fullest wherever possible, in order to make the most efficient use of the limited human and financial resources available in Southern Africa.

In developing indigenous capabilities and resources for the creation, storage, retrieval, use, and management of Scientific and Technical Information (STI), responsible officials in Southern Africa should be fully cognizant of the lessons that have been learned in the past three decades of information systems development in North America and Europe.

One of the most important of these lessons has to do with the relationship between macro and micro levels of design. Most of the successful information systems that have emerged to date have not resulted from grandiose, monolithic design efforts, nor from small, atomistic designs that were allowed to grow. Rather, they began with the premise that large systems, while desirable in certain cases, most often would have to be built piecemeal, out of smaller components designed both to be self-standing "mini-systems" and integral elements of the eventual full-scale system. Often the detailed design work entailed by the sub-system provided information and learning essential to the successful development of the larger system. Initial implementation of the sub-system would eventually become a pilot for the full-scale operation to follow.

The principle that this experience teaches is fundamental to the art of information systems design. As in all systems analysis, the basic strategy is to break something large and complex into small, simple components. Most of the design effort goes into these smaller components, but they must be developed with a clear view of how they will eventually fit together into an integrated whole. The ideal, of course, is to approach both levels of design in tandem.

This principle is directly applicable to the role and need of a center for appropriate technology in Southern Africa. It is eminently logical that such a center should play a central role in developing the indigenous information resources that its member countries need for the support of their development. The advantages, in an enterprise of this sort, of pooling both needs and

resources, are too obvious to require elaboration here. The only questions concern the method in which to proceed, the rate at which to pursue the goal, and the desired configuration of the outcome.

It is in areas such as these that experts in the field can be of assistance. They can provide the development expertise, coupled with a sensitivity to the problems that an appropriate technology center will face in its efforts toward greater autonomy in STI management. The remainder of this section describes some of the steps necessary for the establishment of a Southern African Center for Appropriate Technology in a cost-effective manner calculated to clarify both the problems and the opportunities that will confront such a center.

PURPOSE

In keeping with the points discussed above, the issue of a STI system design for the proposed appropriate technology center will be explored by taking a single high-priority subject and examining the feasibility of developing a specialized information resource for it, under the center's aegis.

The topic proposed for this purpose is food-processing technology (FPT). FPT is an appropriate choice for several reasons. It is at one and the same time critical for both agricultural development and the alleviation of widespread hunger, malnutrition, and disease. As a technology, it operates across a particularly broad spectrum of sophistication--some effective techniques are extremely simple and capital non-intensive, while others require elaborate supportive technology. Moreover, FPT is widely documented, but in a diffuse way. Much information exists, but it is widely scattered. To pull that information together and facilitate access to it will be no small task. All of these factors support the selection of FPT as a test or pilot case investigating the future role of STI management in an appropriate technology center in Southern Africa.

The specific (micro-level) purpose of this project, then, will be to identify, analyze, and evaluate existing information resources world wide for their utility in promoting the development of an indigenous food-processing capability in the countries served by the center. The project will systematically identify and evaluate currently available information resources on FPT. It will also investigate the state of applied FPT in Africa, and examine the potential utility of the existing information resources to the needs of managers responsible for the commercialization of new technologies, the introduction to new regions of existing technologies, or the improvement of current operations. In so doing, it will examine the possibility that, to be widely useful, these information resources may need to be specially processed: translated, interpreted for local conditions, repackaged, etc.

If the establishment of a specialized information processing facility appears warranted, this presentation could be used to provide a conceptual design for its overall configuration (clearing-house, information analysis center, decentralized network, etc.), and an indication of the required scale of operation, staffing and costs. Detailed design of the facility and plans for implementation would be the subject of a subsequent effort.

PROPOSED PLAN OF WORK

The execution of the project will be as follows:

Task 1: Review Food Processing Technology (FPT)

Through consultation with experts in FPT and in development, a project team will review the structure of FPT as it relates to Southern Africa. The team will also review the major information resources (publications, data bases, non-print materials, major collections) in the field, with special attention to the ways in which these resources are organized, classified, indexed, and accessed. Attention will also be

given to the cost of acquiring or accessing these resources.

Task 2: Review Southern African Needs in FPT

The project team will also examine the current state of development of FPT in Southern Africa, and will consult with regional and subject specialists to identify requirements for further development and diffusion of FPT in Southern Africa. Special attention will be given to the pre-conditions to successful development and major obstacles that appear likely to impede development. Of paramount interest will be an assessment of the extent to which specialized information will be required for the creation of an indigenous FPT capability, and a profile of the information needs.

Task 3: Map Information Needs onto Available Resources

The results of Task 1 and 2 will be analyzed in relationship to each other, in order to determine the extent to which Southern African needs for information on FPT might be met from existing information resources. At this point, it will be primarily a question of whether the required substantive content is to be found in these resources, regardless of requirements for translation, interpretation, reorganization and the like. The result of this task will be twofold: a specification of information needs that might be met from existing resources, and an indication of needs that would require the complete creation of new resources.

Task 4: Identify Requirements for Reprocessing and Original Creation

Based on the outcome of the preceding task, the project team will describe in general terms the requirements for the appropriate technology center or its affiliates to engage in the reprocessing (classification, indexing, abstracting, translation, interpretation, or analysis)

of information resources that are currently produced elsewhere. The team will also indicate the kinds of information-generating activities that would be needed from the center or its affiliates. Both sets of specifications will be reviewed with center officials to assign them proper priorities.

Task 5: Formulate System Concept

Based upon all preceding tasks, the project will develop a system concept that encompasses the requirements and opportunities for acquiring available information resources as appropriate, reprocessing them as needed to maximize access and utility, and create new resources where existing ones cannot meet high-priority needs.

This system, or facility, might take any of several forms; an information clearinghouse, an information analysis center, a decentralized network for routing and referrals, or some combination of these. The definition of an appropriate system will include an indication of the required scale of operation, inputs and outputs, needs for staffing and training, computer and other support systems, and time required for detailed design and establishment.

IMPLICATIONS AND EXTENSION

The consequences of this effort will be twofold. First, the appropriate technology center will gain a clear idea of the feasibility of developing a specialized STI facility to support the diffusion of FPT in the countries it serves. On the basis of this exploratory study, the center can either proceed to assemble and direct the resources needed for full scale design and implementation or seek other arrangements.

Second, the appropriate technology center will have gained, through the most realistic means possible, knowledge of the potential advantages, problems, and costs of information system development in general. Moreover, it will have done this in a particularly cost-effective way.

As a consequence of this project, it will be possible for the center, in addition to its action concerning an FPT information system, to mount a similar exploratory study of the feasibility of a much more comprehensive system.

TIME FRAME FOR THE CONSTRUCTION OF A PILOT PROJECT

TASK 1	TASK 2	TASK 3	TASK 4	TASK 5
4 weeks	6 weeks	3 weeks	4 weeks	3 weeks

Upon completion of the six–month in-depth construction of a prototype system, it is expected for three months the project will engage in a vigorous campaign to collect needed data in the focused area both in Africa and abroad. A special team of consultants should be appointed to embark on defining procedures that can be readily adopted in soliciting support for the data retrieval. To follow is a brief description of how an appointed consultant will approach this task. The Black universities in the United States are used as a target sample for this project. The same strategy described can be applied to any existing information industry in Africa that can support data collection and retrieval at this level.

ENLARGING THE PROTOTYPE INFORMATION SYSTEM

For a Southern African center for appropriate technology to expand its information resources, an improved information system can be brought about through information and expertise sharing with universities in the United states, particularly the Black universities. Black universities have a long history of meeting their own information and development needs, despite the limitation of funds. (For a complete list of Black universities in the United States see Exhibit 6)

It is important to note that according to the report prepared for the National Advisory Committee on Black Higher Education, Black Universities have produced 50

percent of Black business executives, 50 percent of Black engineers, 75 percent of Black military officers, 80 percent of Black federal judges and 85 percent of Black physicians in the United States. This could not have been possible without maximizing the use of professional skills in spite of limited resources. Thus, information support of an appropriate technology center in Southern Africa by Black universities could provide effective information access.

STRATEGY FOR INFORMATION FLOW

The strategy for acquiring information support requires an operational system designed to allow the appropriate technology center to adapt information supplied by Black universities for use at the local level. In order for information transfer to occur, it will be necessary to explore an appropriate method for information support and needs assessment, given the geographic dispersion of the universities that will participate in the process.

In its initial stages of development, information will be directed to the appropriate technology center as a receiver. The proposed activities to make information support a reality are as follows:

- Organize a Consortium for Information Support (CIS) that serves as a human resource network between Black universities and the appropriate technology center.

- Initiate a mechanism that can provide selection and analysis for packaging information supplied by participating universities to appropriate technology centers.

- Produce "state-of-the-art" reports as shown in Exhibit 7, before delivery.

- Implement the quickest cost-efficient means of disseminating university holdings to the appropriate

technology center's information system as needed by potential users.

This approach is unique in that it integrates professional skills with available data. Therefore, information can be comprehended, interpreted, evaluated and judged for relevance before it is disseminated to the appropriate technology center.

DESCRIPTION OF INFORMATION RESOURCES THAT THE APPROPRIATE TECHNOLOGY CENTER COULD HAVE ACCESS TO THROUGH PARTICIPATING BLACK UNIVERSITIES

A study would have to be conducted to match the needs of the appropriate technology center with the types of information resources and personal skills that are available in the Black universities. The choice of universities should be based on that university's high level of achievement in a respective academic area. For instance, Tuskegee Institute has a fine agricultural school; Mahere College of Medicine has a distinguished school of medicine; and Howard University has an internationally acclaimed communications department.

For the purpose of this project, Howard University, Lincoln University, Tuskegee Institute and Morgan State University will be examined. These universities are ideally situated, and have ready access to extensive data banks within their locations. Access to these data banks would enable the appropriate technology center to conduct any information searches which might be required by its users.

Howard University is located in Washington, D.C. Its library and other information resources cover a wide spectrum of subject areas which range from African studies, geography, human ecology, and communication, to engineering, architecture, dentistry, pharmacy, medicine and biophysics, to mention a few.

Howard University also has access to resources made available through the consortium of universities in the Washington metropolitan area. This consortium was intended to serve as a reference tool for libraries and to improve interlibrary loan service. The consortium members include the George Washington University, Georgetown University, the University of the District of Columbia and Mount Vernon College.

Besides the information resources Howard University has access to through the consortium, there is also a wealth of data banks that could be utilized for acquisition of needed information. These data banks range from the Library of Congress, World Bank resources and the Organization of American States holdings, to private data banks that cover a wide variety of subject areas. A complete sample of the data banks that can be used around Washington, D.C. has been documented by Margaret S. Jennings in collaboration with the American Society for Information Science (ASIS). The study provides a list of over two hundred data banks in literally all areas of the academic world.

Morgan State College is located only a short distance from Washington, D.C., and in close proximity to the University of Maryland and Johns Hopkins University. All of these are involved in an interlibrary loan system. Thus, Morgan State College has access to an enormous volume of information resources in the immediate surroundings.

Morgan State also has a large collection of its own resources that cater to an interdisciplinary approach in the general area of technology. The available information resources, coupled with the personal skills of the faculty, should provide adequate resources to service the appropriate technology center through its access to the OCLC interlibrary consortium, which provides cataloging for books and other related documents.

Lincoln University has a history of providing education that dates back to 1854. It is located in proximity to three major cities, Baltimore (Maryland),

Philadelphia (Pennsylvania), and Wilmington (Delaware). These cities have universities like Drexel University and the University of Pennsylvania, that offer cooperative programs with Lincoln University in certain academic areas. Thus, Lincoln University has access to the resources provided by these universities and also those resources available in the three neighboring cities.

Lincoln University has recently established a microfilm facility that could enable the compression of information into a form that could be more usable and cost effective for a Southern African center for appropriate technology by the mere process of microfilming the documents before delivery.

Tuskegee Institute is located in Alabama. It has a distinguished record of accomplishment in agricultural sciences. Both its resources and faculty skills, plus knowledge in the area could be sufficient to provide the center for appropriate technology with required information in this vital area of agriculture. However, there are other supportive data bases that can be utilized at a minimum cost to obtain information that cannot be supplied by Tuskegee. These data banks are: Biological and Chemical Abstracts; Tech-search; Commonwealth Agricultural Bureau; Food, Science and Technology Abstracts; Lockheed; and National Technical Information service.

It is worth mentioning that the Black universities discussed have an impressive student and faculty population directly from Africa who can be in a position to render their expertise in this vital area of technology.

WORK PLAN

First, in-depth studies from all sources on the types of available information resources must be conducted. These studies will examine the following elements to ascertain the quality of the available information resources:

- What types of information resources does a university consider most important on its campus?

- What is the most appropriate way of retrieving needed information?

- What are the possibilities of faculty and research staff cooperating in selecting high quality information to support a Southern African Center for appropriate technology?

- What types of arrangement are necessary to link available information resources to that appropriate technology center?

- How can access to resources in participating Black universities be formalized?

After a precise knowledge of the available information resources and needs is acquired, the process of compiling appropriate information for dissemination to meet the needs of the appropriate technology center will begin. Strategies for analyzing the obtained information will be formed at this stage of development. Other functions will be as follows:

- To establish a directory of available information resources from the Black universities and other data banks based on special subject areas.

- To conduct information searches based on the type of information requested by the appropriate technology center.

- To utilize toll-free telephone lines for making urgent inquiries for required information from available information resources (Unfortunately, this is a system that is not yet available in Southern Africa. However, it is very worthwhile and deserves to be mentioned.)

The implementation stage should be relatively simple after the procedures to coordinate all the activities

of the information system have been established. It is at this juncture that the following aspects of the system should be well developed and ready for implementation:

- Technical components of the project;
- Methodologies applied in information procurement;
- Identification of data sources;
- Strategies for implementation of information procurement;
- Arrangements for the acquisition and organization of information resources;
- Selection of appropriate information;
- Projection of future project costs.

Management of acquired information resources will consist of a tightly integrated program aimed at preparing information for dissemination to a multi-cultural audience. Materials acquisition and development will be a major portion of the beginning stages of project implementation. The long-term process of information resources management will include the following tasks:

- Acquisition of materials from other information resources;
- Maintenance of the materials and collection;
- Cataloging of acquisitions;
- Operation of a ready reference and referral service;
- Document identification;
- Design and implementation of abstracts in subject areas;

- Analysis of articles, manuscripts and other documents.

At this stage of the system's development, emphasis ought to be placed more on the services of the clients. The broad services provided should bring together various segments of the user community with special emphasis placed on supplying information that is in a usable form to clients. More specifically, the information system at this juncture of development should be in the position to provide the following services:

- Establish programs that are designed to promote the information world as the essential resource for future development;

- Establish cost-efficient ways of disseminating information to all its clients (e.g., cost-efficient technology monitoring, advisory services and inquiry services);

- Identify, develop, process and disseminate information in the targeted subject areas for the users;

- Through referral service, coordinate and cooperate with other data banks and networks worldwide for procuring information for users.

It is anticipated that at this stage of the information system's development, a strong focus will be directed toward the output capabilities of the system.

At this stage of the system's development it should have an accumulated experience through operations. Therefore, an intensive evaluation of the system that is both summative and formative would be in order. The evaluation of the system will require a systematic way of structuring the activities that take place within the system. Equally important is the validation or assessment of the system in terms of its stated objectives.

The evaluation will employ a team of experts to facilitate objective clarification among individuals

responsible for the Information system's organizational structure. It can be anticipated that the outcome of this evaluation exercise will determine the system's future orientation, including such elements as forecasting and data validation.

At this point the operations of the system should be at full production level. This means the system products should be the determining factor of its value to the users. The products of the system are to be weighed according to the quality of work done in the following area:

- Abstracting, indexing, and subject and key-word search capabilities;
- Preparing handbooks and training procedure guides;
- Packaging information in subject areas;
- Preparing directories, compendia, indexes, bibliographies and special reports;
- Computer-based product sampling and analysis of information;
- Data base publishing;
- Literature searching;
- Providing reference referral services;
- Obtaining documents.

EJ 276 802 IR 511 061
Appropriate Information Technology: A Cross-Cultural Perspective. Baark, Reil *UNESCO Journal of Information Science, Librarianship and Archives Administration;* v4 n4 p263-68 Oct-Dec 1982
Reviews criteria for assessment of appropriate information technology, comparing characteristics of modern information technology developed and applied in industrialized developed societies with constraints for information utilization in developing countries. Options for information technology are suggested. Four references are provided.

EJ 322 642 SE 537 918
Prospects for Appropriate Technology: Clues from the Philosophy of E. F. Schumacher. Willoughby, Kelvin *Environmental Education and Information;* v4 n1 p54-82 Jan-Mar 1985
Discusses the role of technology in environmental affairs. The background of the appropriate technology movement and an analysis of its practicability and viability are provided. Five metaphysical propositions are reviewed and the importance of meta-technological factors is emphasized.

EJ 302 011 SO 512 963
Information Technology and the Sociology of Education: Some Preliminary Thoughts. Young, Michael F. D. *British Journal of Sociology of Education;* v5 n2 p205-10 1984
Sociologists in the United Kingdom have neglected the emergence of information technology and the way it has taken on many of the characteristics of a new fashion. Conceptualizing technology is increasingly necessary if they are to make critical contributions to issues of educational policy and practice.

EJ 284 192 HE 517 252
Man versus Machine: Are We Prepared for the Technological Revolution in Scholarly Research?

Bagnall, Roger S.; Hench, John B. *Change;* v15 n5 p38-42 Jul-Aug 1983
Accessibility of computer technology to the non- technical user has altered the scholar's world. Cooperative ventures will make the libraries of the future work for scholars by providing technological links between scholars and sources of information. Of particular interest to scholars are: microforms, videodiscs, and computerized databases.

Problems of Scientific Information Work in Developing Countries Adimorah, E. N. O. *Inf. Scientist;* v10 n4 p139-48 Dec 1976
The establishment of scientific information and documentation centers in developing countries has not kept pace with the rapid progress in education, science and technology. This may be due to the non-realization of the importance of information to national development by governments of devel- oping countries. Problems of communication, finance, personnel status, bibliographic services, politico-social and information networking encountered by the few practising information scientists in developing areas are briefly discussed. Solutions to some of these problems are suggested.

EJ 264 755 IR 510 180
French Development Cooperation: A Scientific and Technological Information Policy. Aubrac, Raymond *UNESCO Journal of Information Science, Librarianship and Archives Administration;* v3 n4 p217-21 Oct-Dec 1981
Describes a project to provide developing counties with access to scientific and technological information produced in connection with French bilateral development cooperation programs. Making an inventory of the available material, the users of the information, processing the information, and the development of a documentation policy are discussed.

PART 2: SECTION 5

HOW TO CONDUCT A SEMINAR FOR PROFESSIONALS IN INFORMATION SHARING

This document takes the position that institutions and organizations in Southern Africa could benefit greatly from the lessons learned in other global areas in effectively analyzing and implementing information action resources, specifically in the transfer and application of information in multi-cultural and multi-lingual situations. It is becoming increasingly apparent that Southern Africa, at its present stage of development, must take advantage of these international resources because of two important factors.

1. Many developing countries share the socio-economic characteristics of Southern Africa.

2. The types of science and technology being introduced in many areas of the world are compatible with those in Southern Africa.

Thus, cooperation will bring alternative solutions to problems that might arise in the process of developing more viable information resource networks in all of the regions involved. Such close relationships would encourage interest in formalizing international information sharing in the following areas:

1. State-of-the-art information on issues related to information resource networks.

2. Strategies for disseminating information in multi-cultural and multi-lingual situations.

3. Information on current research and development programs in specialized areas of technology.

4. Information modules and training instruments on food, energy, and appropriate technology.

5. Information on new management and administrative techniques for applying innovative approaches to technology.

This great potential for mutual gain in the above areas calls for a dialogue, bringing the two groups together to identify ways and means of information sharing. Knowledgeable individuals are encouraged to initiate this dialogue through a seminar and sensitivity-training workshop, the purpose of which would be to raise mutual awareness of each group's capabilities. These geographic areas would thus become cognizant of their common interests and concerns.

PURPOSE

The primary focus of the seminar will be to provide insight into information systems and to afford the participants the opportunity to formalize plans for the development of information-sharing networks between Southern Africa and other developing countries. It is expected that the outcome of this seminar will be the establishment of a systematic approach to improving the transfer, retrieval and delivery of technical, agricultural, health, and economic information intended to advance the development of participating nations. Moreover, during this seminar, participants will investigate the properties and factors governing information flow, as well as methods of processing information for optimum accessibility and utility. Thus, cooperative relationships between the countries of Southern Africa and other developing nations will facilitate the search for alternative solutions to problems that might arise in the process of developing viable information resource networks in each region, since much of the science and technology being introduced in Southern Africa and other global areas is compatible.

In order to accomplish the aforementioned mission, the following areas will be addressed.

1. Innovative approaches to information technology.

2. Current issues in information technology relating to information resource networks.

3. Strategies of information dissemination in multi-cultural and multi-lingual situations.

4. Current research and development programs in specialized areas of information technology.

5. Technological and resource network training modules and instruments on agricultural, health, energy, economic and finance information for developing countries.

6. Administrative strategies for developing management information systems.

Prior to the seminar, a thorough needs assessment will be administered to all potential participants in order to ensure that the structure and content of the seminar actually addresses the specific needs of the participants.

To follow is a tentative schedule of activities showing how such a seminar might be conducted. This schedule has been designed for a six-day seminar, and could be shortened or lengthened according to the needs of the participants and the time constraints of the organizers.

SCHEDULE OF ACTIVITIES

Saturday: Arrival of Participants (all day).

Sunday: Day 1

9:00am - 10:00am	Introduction, Invited participants
10:00am - 1:00pm	Brunch Opening Address: "State-of- the-Art Information Systems"
2:00pm - 5:00pm	Informal Needs Assessment Review Registration
6:00pm	Dinner

Monday: Day 2

8:00am - 9:30am	Breakfast
9:30am - 11:30am	Roundtable Discussions: "Developing an Information Systems Network"
11:30am - 12:00	Group Informal Luncheon
12:00pm - 2:00pm	Lunch -- Keynote Speaker
2:00pm - 5:00pm	Concurrent Session I: Management Information Systems A. Issues & Strategies B. Utilization Techniques C. Networks for Information Activities
5:00pm - 6:00pm	Journal Entry & Structured Interviews (random)
7:00pm - 9:00pm	Dinner Reception

Tuesday: Day 3

8:30am - 9:30am	Breakfast

9:30am - 11:00am	Innovative Approaches to Information Techniques
11:00am - 6:00pm	Tours of Databanks and operating Information Systems. Lunch at one of the sites
6:00pm - 6:30pm	Journal Entry & structured interviews (random)
6:30pm - 8:00pm	Dinner
8:00pm - 10:00pm	Informal & Individual Group Discussions

Wednesday: Day 4

8:00am - 9:30am	Breakfast
9:30am - 12:00	Roundtable Discussion: "Information Systems: Efficient Management, Planning, Decision Making, Reporting and Control."
12:00 - 1:00pm	Lunch
1:00pm - 3:00pm	Concurrent Session 2: Specialized Technology, Current Research and Development Programs. A. Health & Social Resources B. Agricultural & Land Use C. Energy & Water Resources D. Finance & Economics E. Training for Management of Information Systems.
3:00pm - 5:00pm	Information Technology: Dissemination & Application
5:00pm - 6:00pm	Journal Entry
6:00pm - 8:00pm	Dinner

8:00pm - 10:00pm	Informal Individual & Group Discussion

Thursday: Day 5

8:00am - 9:30am	Breakfast
9:30am - 11:00 am	Innovative Approaches to Information Techniques
11:00am - 6:00pm	Tours of Information Systems & Communication Centers
6:00pm - 6:30pm	Journal Entry & Structured Interviews
6:30pm - 8:00pm	Dinner
8:00pm - 10:00pm	Informal & Individual Group Discussions

Friday: Day 6

8:00am - 9:00am	Breakfast
9:00am - 10:30am	Small Group Discussion: Approaches to Information Technology
10:30am - 11:00am	Break
11:00am - 12:30pm	Re-evaluation of Individual Needs Assessment
12:30pm - 3:00pm	Closing Remarks: Lunch Speaker
3:00pm - 5:00pm	Post Seminar Informal Discussion & Fact Finding

Saturday: Departure

SEMINAR PLAN

This seminar is designed to launch the cooperative exchange of knowledge and experience with information technology and resource networking so as to enhance the accessibility and utility of the participants' respective information holdings. To succeed in this effort, the organizers will marshal appropriate interdisciplinary experts and technical resources from within the regions involved. The content of the seminar will consist of information related to formalizing and establishing a plan for information networking. It is important that information ministries achieve a high level of knowledge and sensitivity to the informational needs of their individual country, region, and ultimately the world, in order to assess, prescribe, design, manage, and evaluate the most appropriate uses of information technology for enhancing the advancement of third world countries.

Although the organizers will determine who will be invited to participate in this seminar, special effort will be made to ensure that representatives come from a diversity of backgrounds, and have some knowledge or experience relating to information systems. Additionally, consideration will be given to the level of information technology which is currently utilized by the representative's country.

Content of the seminar will be tailored to meet the specific needs and issues designated by the participants through a pre-seminar survey and needs assessment, which will be administered by the organizers.

DEFINITION OF TERMS

Definition of several terms will be helpful to establish the programming parameters of the seminar. Therefore, the following definitions apply:
SYSTEM is an organized collection of men, machines, and material required to accomplish a specific purpose and tied together by communication links (that constitute a network).

INFORMATION SYSTEM is that combination of human and computer-based capital resources which results in the collection, storage, retrieval, communication and use of data for the purpose of efficient management (planning, decision-making, reporting and control) of operations in organizations.

INFORMATION TECHNOLOGY involves the application of tools and techniques of information science to the operational problems of an information system. Computers, telecommunications and micromedia are typical examples.

SYSTEMS ANALYSIS is a formal procedure for examining a complex process or organization by reducing it to its human and material resources and relating these component parts to each other and to the unit as a whole in accordance with agreed-upon performance criteria. It is both a general approach to problem-solving and a group of scientific techniques drawn from many fields and disciplines that are used in solving particular problems.

SYSTEM DESIGN is a formal procedure for combining human resources, equipment, techniques, information, data and work procedures into an integrated construct (sometimes a network) in order to facilitate organizational performance.

NEEDS ASSESSMENT

The pre-seminar surveys will be administered as a needs assessment/profile to all persons scheduled to participate in the seminar.

A needs assessment is a way to target the important elements that can improve the educative process. It helps trainees focus on real needs, not on extraneous factors. It also provides a basis for evaluating the effectiveness of subsequent actions.

"Needs" can be defined as the difference between what is and what should be. In order that the proposed seminar satisfy the organizational needs of the participant countries and regions, the following approach will be taken:

A. Needs will be specifically delineated through systematic data collection processes

B. Strategies to meet those needs will be identified

C. The seminar program will be structured according to the needs and remedial strategies identified.

To isolate the specific needs of seminar participants, the needs assessment will focus on the knowledge and perceived needs of participants regarding the outlined issues and problems of information flow (transfer). The end goal for collecting this data is to better target preparation of training materials and to facilitate implementation of the Information Resources Networking Institute.

Prior to the first session, the participants will complete three survey forms that will be designed and administered by the organizers. These instruments will assess the personal perceptions of organizational style, curriculum planning management approaches, communications and general organization or institution planning.

The survey instrument to be used will include a measurement of semantic differential, an organizational perception scale, and open questions. Semantic differential is a method for measuring an individual's definition of concepts in terms of their semantic or attitudinal properties. The organizational scale devised for the seminar will be designed by the organizers. The scale should help delineate the participants' perception of their roles in the institutional setting. In many instances, the perception of these roles are subject to error because there is a lack of information or because information

provided is not processed or institutionalized. The scale will also point out how the response to leadership is a function of the individual's perception of his role or roles and the flexibility, autonomy, ambiguity and conflict inherent in them.

There will be some questions asked about the governing of the institution, anticipated learning needs, the existence of outstanding resources, the status of administrative personnel and staff development. Additionally, data on the level of information technology which is operational within the region will be collected. This information will be analyzed for use during the four-day Institute. A needs assessment summary will be compiled for dissemination to all representatives attending the Institute. Summaries will be compiled based on individual and regional needs.

FACILITIES, TRAINING SITES AND SCHEDULES

The orientation session for the consultant/trainers who will develop the instructional packages and conduct the content sessions during the seminar will be held prior to the seminar so that learning packages may be critiqued and perfected prior to their use during the training seminar. This will also afford the organizing staff an opportunity to assess the institutional effectiveness of consultant/trainers prior to the seminar. The seminars will be held in conference facilities. Back-up facilities will be available to logistically support the management and conduct of the seminars and all other activities related to this project. The organizers would aim to utilize training facilities which would maximally support the type of training herein proposed.

The site designated will conform to the specifications herein. The preliminary assessment of the availability of facilities reveals that resources are present at several sites to support operation of the Information Resource Network Seminar/Workshop. Procedures are to be established which will ensure:

1. Adequate housing and food service for participant trainees and staff at cost-effective rates.

2. Adequate conference and meeting rooms.

3. Availability of equipment such as projectors, chalkboards, copiers, etc.

4. Accessibility of all facilities to handicapped participants

EVALUATION OF THE SEMINAR

The training evaluation design will follow an execution impact model. Following this model, the evaluator seeks to determine the degree to which the program was executed according to plan and the degree to which the program produced the expected results.

Evaluation objectives related to the assessment of programs execution include:

- Determining whether the program activities are serving trainees with identified needs as determined by the needs assessment process.

- Documenting through project records who is being served; for what purpose (needs) they are being served; how they are being served; and when and how often they are being served.

- Determining the congruence between what is planned to occur and what actually occurs, as well as the reasons for any discrepancies.

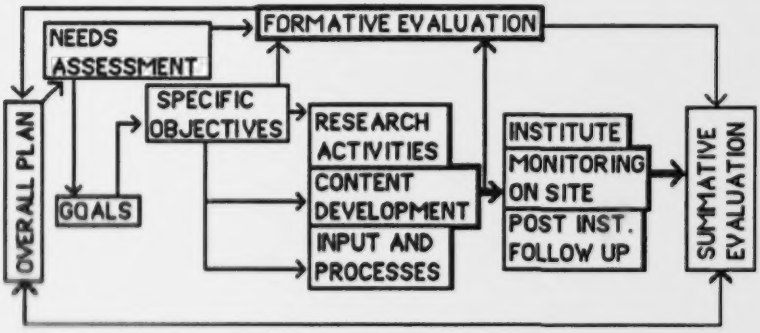
- Documenting execution problems that may impact upon the success of the program so that project staff, if not already aware of the problems, can take the needed corrective action.

The evaluation objectives relate to the assessment of the impact of the content information and whether

project activities changed the target group in the direction expected.

Suchman (1969) suggested that program evaluation should be an ongoing process which relates to all stages of program planning, development and operations and provides for unanticipated project problems or accomplishments to be considered during the evaluation process. The model to be used at the seminar incorporates each of the aforementioned aspects.

The graphic description presented in Figure 1 further illustrates the specific relationship between the project's overall plan and the various institute research activities and components.



In essence, this closed-loop evaluation methodology not only provides for the continuous assessment and outcome but it is designed in part to provide documentary evidence to support exigent and on-going program revisions and refinements at defined intervals during the duration of this project.

DATA COLLECTED DURING AND BETWEEN SESSIONS

Interviews: After each session, a structured interview will be conducted. Randomly selected participants will be questioned about the preceding session, anticipation for the coming session, and perceptions and attitudes about the seminar in general.

Journals: Each participant will be asked to complete a regular journal following each session. The journal entries should describe the participant's perception of the usefulness of the previous session, its relevance or lack thereof, the effectiveness of the workshop format, and other feelings related to arriving at a conceptual framework for an education-evaluation system.

Participant Observations: An evaluator will attend each session in order to conduct an objective review of the progress being made in the seminar. This task will be done by the organizing staff.

POST-SEMINAR DATA COLLECTION AND REPORTS

The post-seminar data collection effort will be designed as a fact-finding session aimed at noting any significant changes in the concepts, perceptions and attitudes of participants toward information-sharing and dissemination of his or her organization. All interviews and journals will be used by the participants and seminar planners to compile a summary report and a set of recommendations.

As used in this proposal, the term "evaluation" is defined as the continuous systematic process of obtaining information about project activities and outcomes to facilitate managerial and outcome success decisions. Thus, through careful determination of the information needs of the staff and through regular and systematic data collection, evaluation activities are viewed as assisting project management with documenting program progress and problems. This documentation can serve project staff

as the basis for decisions about needed corrective action. In addition to obtaining information about program activities, data will be collected on proposed outcomes of the project in order to determine the degree of success project activities had upon producing expected program outcomes. An attempt to document unexpected outcomes will also be made.

In summary, the evaluation modal to be used by this project will be both formative and summative in nature. Interim progress reports of the Institute's activities and findings will be submitted to the funding agency monthly. Summary reports will be prepared annually for dissemination. A final summative evaluation report will be completed for dissemination at the end of the project cycle.

EJ 295 560 IR 512 336
The World Bank and School Library Services. Mahar, Mary Helen *School Library Journal;* v30 n7 p113-17 Mar 1984
Describes formation of the seminar on School Libraries/Media Centers held on October 19, 1982, at the World Bank, Washington, D.C. Highlights include seminar writers, summaries of three background papers (teaching-learning role of media centers/libraries; organization, structure, staffing and administration; perspective from developing countries); observations; and participants' discussion.

EJ 232 589 IR 508 389
Library Skills Workshops for Support Personnel. Patterson, Thomas H. *Research Quarterly;* v19 n4 p351-53 sum 1980
Describes the library skills workshops, expressly designed for faculty secretaries, executive secretaries, administrative assistants, and clerk-typists, that have been successfully experimented with by the University of Maine at Orono Libraries.

EJ 216 291 HE 512 190
Beyond Undergraduate Orientation: The Library as Place of Education and the Librarian as Educator. Morton, Bruce *Improving College and University Teaching;* v27 n4 p161-63 Fall 1979
Instruction in the use of college libraries makes little sense unless it is related to classroom activity. Several teaching methods are discussed that address library instruction within specific educational contexts. Focus is on a method that involves the librarian as a seminar participant with students and professor.

ED 136 792 IR 004 582
An Outline of How to Plan a Workshop. Roughton, Anne; Powers, Audrey. San Francisco Public Library, Calif. Bay Area Reference Center Aug 1976 26p

This is a revision of a guide (IR 003 265) for planning a library workshop. It is presented in five parts: (1) the workshop planners, (2) planning the program, (3) the day of the workshop, (4) evaluation and follow-up, and (5) information sources. The major part of the guide is concerned with program definition, selection of time and place, equipment and materials, presentation techniques, speakers, budgeting, kit materials, display plans, announcements, and agenda. Most of the instructions are given in outline form as check lists, questions, or brief directions.

ED 041 599 LI 001 890

A Program to Provide for Increased Communication among Educational Information Centers. Final Report. Sherman, C. Neil; and others. System Development Corp., Falls Church, VA. 12 Jun 1970 251p. (H.E.W. sponsored)

This project was based on the preceding year's investigation and analysis of the educational information center community. The emphasis of the present contract was on increasing the communication among personnel involved in educational information work. The principal activity undertaken toward the achievement of this objective was the development, organization, and conduct of eight regional seminars. Related to this activity was the identification and selection of ten outstanding centers represented at the seminars. Visits were made to each, and narrative descriptions written. A third major task was the compilation of a revised and updated "Directory of Educational Information Centers." A survey was made of over 900 organizations to gather the necessary information for this second edition. Final copy has been submitted to the U.S. Office of Education as a separate program, a computer demonstration of the Corporation's on-line retrieval system (ORBIT) was prepared, using an ERIC data base. Second, the test for a revision of the "How to Use ERIC" brochure was written.

EJ 232 704 IR 508 510

Using Needs Assessment Strategies for Effective

Workshops. Anderson, William A. Journal of Instructional Development; v4 n1 p19-22 Fall 1980
Presents rationale and guidelines for assessing audience needs before workshops are planned. An initial checklist of appropriate information to gather is presented, and strategies for obtaining information are discussed.

ED 255 470 SP 025 705
Research Within Reach: Resources for School Improvement. Final Report. Meehan, Merrill L, Appalachia Educational Lab., Charleston, W. Va. 30 Nov 1982 188p
A detailed report is given on the mechanics involved in conducting a successful bi-regional workshop for educators. The theme of the workshop was designed around two Research Within Reach (RWR) documents dealing with oral/written communications and secondary mathematics; however, papers and discussion generated by the workshop are not included in this report. An overview is presented of the objectives of the workshop, followed by step-by-step descriptions of the planning, implementation, and evaluation of the workshop. The appendices include: (1) sample letter to workshop presenter/consultant; (2) memo to Educational Services Office (ESO) state contact persons; (3) pre-workshop letter and enclosures sent to participants; (4) participant's workshop packet; (5) dissemination plan handouts; (6) post-workshop letter to participants; (7) participants' final dissemination plans; and (8) workshop evaluation form.

ED 242 013 EA 016 447
After the Meeting, Then What? Ratteray, Oswald M. T. *Successful Meetings.* p76-77 Feb. 1984
For productive follow-up of meetings and seminars, an executive summary can be invaluable. Such a post-meeting synopsis enables leaders to reinforce important meeting content which can lead to greater productivity for the participants. Strategies for creating and using an executive summary include: (1) selecting a summarizer to write down and later evaluate the proceedings, (2) tape recording the meeting, (3) saving charts, (4) questioning attendees, (5) transcribing only critical data rather than

whole meetings, (6) synthesizing information clearly and concisely, (7) evaluation forms, (8) publishing executive summaries in company journals or newsletters, (9) building an index system for filing meeting summaries, and (10) making use of expertise collected in the archives of meeting summaries for further use.

ED 235 395 CE 800 026

Workshop Helper: Tips on How to Run a Successful Workshop. Hardrick, Juanita; and others. Humphrey Occupational Resource Center, Boston, MA 1983 8p

Guidelines are presented to aid workshop leaders when planning and facilitating workshops. Listed are : (1) five types of activities for workshop participants; (2) six kinds of workshop formats; (3) three questions to ask when planning workshops; (4) pre-planning steps to follow when organizing a workshop; (5) suggestions for workshop leaders; (6) a checklist of prearrangement details; and (7) starter activities which can be used to encourage group interaction among those attending workshops. A workshop evaluation form is also provided.

GLOSSARY

ABSTRACT--a brief, factual, and objective summary as paraphrased by an abstractor.

ABSTRACT BULLETIN--a printed or mimeographed bulletin containing abstracts of recent articles or reports, issued regularly by a special library to its clientele.

ABSTRACTING SERVICE--an organization producing abstracts, which may be comprehensive or selective.

ACCESS--to communicate with an information system (card catalog, computer, etc.) in order to use or store information in it. Access may be multiple, sequential, or random.

ACCESSION LIST or ACCESSIONS BULLETIN--a publication, issued periodically, listing recent additions to an information system.

ACCESSION NUMBER--an identifying number, usually in ascending sequence, assigned to each document added to an information system.

ACQUISITION--the process of identifying and verifying needs and ordering new items for an information system. May include order follow-up, receiving, and payment.

ALERTING SERVICES--organizations that announce publications, documents, etc. on a regular basis to keep a given user audience informed.

ANALOG COMPUTER--a computer that calculates by using physical analogs of the variables. See also DIGITAL COMPUTER.

ANALYSIS-- all functions related to processing of information or data, including manipulation and repackaging, question answering, data validation, and data standardization.

AND, OR, NOT LOGIC--Boolean logical operators used in formulating a computer seach strategy. OR--links words

or phrases, any one of which will satisfy the user question; creates a parameter or set. AND--links one parameter with another, requiring at least one term from each to be present to satisfy the question. NOT--excludes words and/or phrases to satisfy the question.

ANNOTATION--an added descriptive comment or explanatory note used in card catalogs, reading lists, bibliographies. Shorter than an abstract.

APERTURE CARD--a punched card with an opening specifically prepared for the mounting of a fram of microfilm.

APPENDIX--information that supplements the text of a book or report; e.g., statistical tables, graphs, diagrams, lists of resources.

AUTHORITY LIST--a list of acceptable terms for indexing or cataloging in an information system; e.g., subject heading or corporate author authority list, thesaurus, dictionary.

AUTOMATIC ABSTRACTING--techniques whereby a subset of sentences in a document are slected, on the basis of statistical properties, as representative of its general content.

AUTOMATIC DATA PROCESSING (ADP)--the processing (classifying, sorting, calculating, summarizing, recording, printing) of data using computers and computer-related equipment.

AUTOMATIC INDEXING--mechanical methodss, based on statistical properties of words in a document, of identifying what the document is "about".

BATCH PROCESSING--a technique in which data is coded and collected into groups for processing during a single machine run.

BIBLIOGRAPHY--list of writings on a specific subject, period, author, or other unifying concept. May include annotations or abstracts.

BIT--abbreviation of "Binary Digit;" a single character of a language having exactly two distinct kinds of characters. Used when 0, 1 are used without numeric significance.

BROWSABILITY--characteristic of a ducumentation system (e.g., open-stack library or printed index) that lends itself to unsystematic or random searches.

CAPACITY--the number of words or characters that can be held in core memory on a drum or disc device, magnetic tape, etc. The maximum number of decimal or binary places that can be contained by a computer.

CENTRAL PROCESSOR--a unit of a computer that includes the circuits controlling the interpretation and execution of instructions.

CHARACTER READER-- computer input device that can directly recognize printed or written characters on paper, without their first being converted into punched holes or magnetic spots. May operate optically, electronically, or magnetically.

CITATION INDEX--directory of cited references in which each reference is accompanied by a list of source documents that cite it.

CLASSIFICATION--distribution into groups. Systematic division of a group of related subjects.
A schedule for the arrangement or organization of documents (e.g., Decimal, Library of Congress, or Universal Decimal Classification).

CLEARINGHOUSE--organization that collects and maintains records of research and/or projects, provides related documents, and provides referral services to other sources of information.

CLUE WORDS--selected words in the text that in the abstractor's thinking identify the nature of the pertinent content of the text. Also called index terms, keywords, descriptors or search terms.

CODE--(1) a communication system for information; (2) a system of symbols used in transmitting or storing information; (3) a representation of term or item that reduces the size of storage or that improves the ability to manipulate system components.

COLLATE--to compare or examine, to verify the presence or absence of specific items (e.g., to assemble the pages of a document in correct order).

COLLECTION--in an information system, the sum total of all items stored.

COMMUNICATION--act of transmitting or making known information by words, letters, books, documents, speech, or visual aids.

COMPUTER--a device capable of accepting information, applying definite reasonable processes to it, and supplying the results of those processes.

COMPUTER PROGRAM–see PROGRAM

CRITICAL REVIEW--comprehensive, expert review that analyzes and evaluates a specific document with reference to the field.

COPYRIGHT--the exclusive privilege of publishing and selling a work, granted by a government to an author, composer, artist, inventor, etc.

CURRENT AWARENESS--service that slects all pertinent articles and documents on an as-published basis for announcement to a given user group. Dissemination can be abstract-index publication, clipping service, etc. Synonyms: selective dissemination, alerting services, announcement bulletins.

CYBERNETICS--the theory of the methods of control and communication common to machines and living organisms.

DATA--symbolic representation of information (e.g., letters, numerals, or other characters in a document). The record of signals received from a sensing device.

DATA BASE--the documents or data collection that is the basis for an information retrieval system (usually computer processed)

DATA PROCESSING--systematic sequence of operations on data, performed in accordance with precise rules of procedure. Includes sorting, merging, computing, assebling, compiling, translating, extracting, storing, and retrieving data.

DECIMAL CLASSIFICATION--generally, a classification that uses numbers arranged decimally for its notation. Specifically, the Decimal Classification of Melvil Dewey.

DIGEST--a condensation of the important elements of a document. A brief condensation of a written work, often in words other than those of the original.

DIRECTORY--a list of persons or organizations, systematically arranged usually in alphabetic or classed order. Includes addresses, affilitations, officers, functions, etc.

DISC--a direct access storage device in shich data is recorded on a number of concentric circular tracks on magnetic discs.

DISSEMINATION-- the distribution of information (especially from a library, documentation center, computer) to a person or organization engaged in intellectual activity. See also SELECTIVE DISSEMINATION OF INFORMATION.

DOCUMENT--record of data or concept in any form from which information can be derived (e.g., page, graphic representation, tape recording, book, report, motion picture film, microfilm, instrument chart).

DOCUMENTATION--the science of collecting, storing, and organizing recorded informational materials or documents for optimal access.

DRUM--a magnetic storage unit in the form of a cylinder that revolves at high speed past multiple read/write heads.

EXTRACT--verbatim passages from a document; to select such passages. The purpose is to convey the essence of the document.

FEEDBACK--reaction by a destination (individual, equipment, or system) to a transfer of information, and transfer of (part of) the reaction to an information source.

FILES--a collection of related data items that are treated as a unit. May be made up of many items and may have one or more record segments, structure may be sequential or random.

FLOW CHART--graphic representation of routines and procedures arranged in order of occurrence.

FORMAT--the layout of a printed document, with regard to printing area, spacing, punctuation. Also any other predetermined arrangement of data; e.g., instruction or file format.

HARD COPY--the original document or reproduced paper copy made form microfilm. Also a printout from magnetic tape or tabulating cards.

HIERARCHICAL CLASSIFICATION (Hierarchy)--a method of classification in which a series of classes are divided into successive subordination.

INDEX--file of locators for documents or information. Also a list of the names or subjects referring to a document or group of documents, search terms, key words. See also KEY WORD IN CONTEXT INDEX, PERMUTED INDEX.

INDEXING--process of selecting or assigning identifiers of document subject content (often controlled vocabulary), or , in computer systems, of document author, source names, titles, etc.

INFORMATION--the meaning assigned to data, or a description of data. Knowledge concerning some particular fact, subject, or event in any communicable form.

INFORMATION CENTER--an organization for acquiring, processing, and disseminating information. May include a library.

INFORMATION PROCESSING--the totality of scientific and business operations performed by a computer in processing data that represents information. A less restrictive term than data processing.

INFORMATION RETRIEVAL--recovery of stored data from a collection for the purpose of obtaining information. Includes all procedures used to identify, search, find, and remove specific information or data.

INFORMATION SCIENCE--the study of the generating, acquiring, processing, storing, retrieving, disseminating and using of information.

INFORMATION SPECIALIST--a person primarily engaged in the processing of data in a particular field.

INFORMATION SYSTEM--a network of information services providing facilities by which information and data are processed and transmitted from originator to user.

INPUT--data or information to be processed. The device(s) used for bringing data into another device. The process of transferring data from external to internal storage.

INQUIRY--a question directed to an information system requiring the index to point out the particular item(s) in the collection that answer or satisfy the inquiry.

INTERACTIVE SYSTEM--a system that allows dynamic communication (or feedback) between a human and a machine as a means of operational control or modification.

INTERFACE--the junction between two devices; e.g., the central processor and a peripheral device that exchanges information in a controlled manner.

INTERNAL STORAGE--memory; addressable storage areas considered an integral part of the computer directly controlled by the central processing unit (CPU). High speed ferrite-core, thin-film, or plated-wire storage areas.

INVERTED FILE-- file organization in which a record consists of a descriptor or keyword followed by all documents or document numbers described by that term.

ITEMS--In information systems, units of written information; a document of any number of pages (letter, report, book).

JOURNAL--a periodical or newspaper, particularly one issued by an institution, corporation, or learned society covering activities in a particular field.

KEYPUNCH--a keyboard-actuated device that punches holes in a card to represent data.

KEYWORD--grammatical element that conveys the significant meaning in a document; word indicating a subject discussed in a document.

KEYWORD IN CONTEXT INDEX (KWIC INDEX)--listing, usually of titles or significant sentences from an abstract with the keywords put in a fixed position within the title or sentence and arranged in alphabetical order.

KEYWORD OUT OF CONTEXT (KWOC)--An alphabetical index to significant words in document titles or abstracts in which each keyword is listed together with, but separated from the original titles/abstracts in which they appear.

LIBRARY OF CONGRESS CLASSIFICATION-- classification scheme that maintains only the loosest connection between its main classes. The schedules consist of a series of

separate main classes, each with its own relative index; notation scheme is alphanumeric.

LINEAR FILE--file organization in which a record contains all descriptors used to index a document and an abstract or citation of the document.

LITERATURE--systematic and sometimes exhaustive search for published material bearing on a specific problem or subject.

MAGNETIC CORE--a configuration of magnetic material placed in a spatial relationship to current-carrying conductors and whose magnetic properties are essential to its use.

MAGNETIC TAPE--the tape of any material coated or impregnated with a magnetizable substance upon which information can be recorded by magnetic flux.

MEMORY--capacity to store information; any device into which information can be introduced for extraction at a later time; the physical structure embodying a coding field or store.

MICROFICHE--transparent sheet film containing micro or miniaturized pages arranged in a grid pattern by rows; usually a negative transparency 4 X 6 inches, capable of accommodating 60 manuscript pages.

MICROFILM--negative or positive micro-photograph on film, usually applied to a sheet or strip of film; a micro-transparency in reel form. Also to make micro-photographs.

NOISE--(1) items selected in a search that do not contain the information desired; (2) loss of information, i.e., failure to recover desired information stored in a system; (3) an undesirable signal that disturbs the desired signal in a communication network.

OFF-LINE--pertaining to equipment not connected with the central processing unit of a computer.

ON-LINE--pertaining to equipment or devices directly under the control of the central processing unit of the computer.

ON-LINE EDITING--a technique for modifying or manipulating data as it is entered via a terminal. Corrections or substitutions can be performed.

OPTICAL SCANNER--a device used to recognize different symbols and characters that are then placed into a control unit for conversion into a language meaningful to the computer

PERMANENT MEMORY (COMPUTERS)--storage of information that remains intact when the power is turned off; e.g., storage on a magnetic drum.

PERMUTED INDEX--an index generated, usually automatically, from terms in a string (i.e., a title) by cyclying the string to successively position each term in a fixed "indexing" position on a line, then to alphabetize all resulting entries in that position.

PRIMARY DISTRIBUTION--the initial sending of a document from its orignator or publisher to more than one destination

PROGRAM-- a set of instructions that tells the computer how to handle a problem or process data. May be written in machine language, assembly code, etc.

RANDOM ACCESS-see ACCESS

READER--equipment capable of enlarging micro-images to a size that can be read with the naked eye. Images are projected on a ground-glass screen.

REFERRAL CENTER--an organization for directing searchers for information and data to suitable sources such as libraries or documentation centers.

REDUNDANCY--use of more words or symbols than needed to convey the thought or word; planned repetition in order to overcome noise in the system.

RELEVANCE--the "measure" of the closeness of a retrieved piece of information to the answer of the inquiry.

RESPONSE TIME--the elapsed time between an inquiry and the receipt of the response.

RETRIEVAL--technique of seaching an index file or document collection for information.

SEARCH STRATEGY--analysis and formulation of the optimum methods by which a specified requirement for information may be answered in a documentation system.

SECONDARY DISTRIBUTION--distribution of documents in response to requests received after primary distribution has been completed.

"SEE ALSO' REFERENCE--a reference to a related term

"SEE' REFERENCE--a direction in a catalog or index from a term or name under which no entries are listed to the heading where entries do appear.

SELECTIVE DISSEMINATION OF INFORMATION (SDI)--an active method of distributing selected documents or information according to interest profiles. Not necessarily computer-based.

SOFTWARE--the necessary complement to hardware; the collection of programs and routines associated with a computer. Two broad functional categories; systems software and applications software.

SORT-- to arrange manually or by machine, data, documents, or related items of information in an ordered sequence, either alphabetically, numerically, or by class.

STATE-OF-THE-ART REPORT--a comprehensive analysis of available knowledge on the status of a particular subject, frequently written for the use of a specific reader.

STORAGE DEVICE--a device in which data can be inserted, retained, and then retrieved for later use; e.g., cards, paper, or magnetic tapes.

SUBJECT HEADING--a word or group of words indicating a subject under which all material dealing with the same theme is entered in an index, catalog, or bibliography, or arranged in a file.

TABLE OF CONTENTS--a list of preliminary sections, chapter titles, and other parts of a book, or of articles in a periodical, with reference to the pages on which they begin. Also called contents.

TECHNICAL INFORMATION--information or data that relates to research, development, engineering, testing, evaluation, production, operation, or use of scientific of military activities.

TERMINAL--a keyboard device loaded at the end of a data link to a computer that is used for input-output purposes.

THESAURUS--guide to words of expressions needed to do a certain job. Displays relationships between sysnonyms, antonyms, and generically related terms.

TIME-SHARING--a computing technique in which numerous terminal devices can utilize a central computer concurrently for input, processing, and output functions.

EXHIBIT 1

WORKPLAN

PHASE I: Preliminary Staff Training

The first step to make the learning resource center a reality will be to conduct training workshops for the reserve section staff. The training sessions will utilize a methodology that is designed to raise awareness by allowing the staff to learn new techniques of data processing under an approach which encompasses learning, teaching management and services (LTMS). Below is a brief illustration of what each component encompasses:

Learning:

Establish an acceptable learning process for all students (e.g., seminars, guest speakers, etc.)

Create an environment that is conducive to learning for those who are in the lower level of educational situations.

Teaching:

Encourage wider use of non-traditional teaching techniques (e.g., audio visual aids, tape, cassettes, films, etc.

Develop a series of courses on various aspects of teaching (e.g., counseling, tutoring, coaching, etc.).

Management:

Establish ways of assisting in planning, organizing, staffing and controlling the learning resource center.

Provide leadership in innovation, motivation, evaluation and suggestedimprovement of the learning resources.

Establish cost-efficient ways of disseminating information to all of the user community.

Service:

Serve the learning resource center in promoting its value to others.

Serve in distributing information for public consumption.

PHASE II: Announcement to user community

The second step will require announcements to all the schools within each of the universities about the added dimension of the reserve section.

Seminars or meetings would have to be conducted with the heads of the divisions either on an individual or group basis as needed.

These first two stages are necessary for the preliminary planning of the learning resource.

PHASE III: Pilot Project

The third step would require running a pilot project utilizing one department or school as a model for the project. A division which has a high level of interest in reserve section activity should be selected.

1) Invite faculty to bring their classes to the reserve section for a briefing of the resources available.

2) Solicit their course outlines.

3) Gather bibliographic entries according to high priority of no more than five items from one course outline.

4) Monitor the degree of usage of material in the course bibliography through a tabulation system.

5) Design pilot project for one semester.

6) Evaluate the outcome of the pilot project for measurement of the degree of success or failure.

PHASE IV: Full Operational Stage

1) The results of the pilot project may be presented to the appropriate policy committees where the decision would be made to invite schools within the universities to become involved with the learning resource center.

2) When cooperation is secured from all divisions, full fledged operations of the learning resource center may be conducted for one fiscal year.

3) Evaluate the project at the end of the year and make recommendations for the future direction of the learning center and any necessary changes.

EXHIBIT 2

OCLC

ILL Subsystem

Reference Guide to Borrowing Procedures

CREATING REQUESTS (2.4)*

(1) Search OLUC for bibliographic record

(2) Display holdings symbols

(3) Select up to 5 potential lenders and request worksheet

(4) Determine date needed by patron and if more than or equal than 30 days from date generated, do one search of New Serial

(5) Manually retain or pulls entry and modify
- title (press RETURN to check or ignore) TITLE
- required edition EDITION (BORROWING NOTES)
- place, publisher, date (IMPRINT)
- journal article or part of work ARTICLE (author and title)
- issue and pagination VOL NO DATE PAGES
- source of citation and location VERIFIED

(6) Enter required shipping address SHIP TO
Separate each element of the address with a slash

(7) Enter other optional borrower data
- patron name or ID number for access to records by patron name or ID number PATRON
- billing address if different from shipping address BILL TO
- preferred method of shipping SHIP VIA
- copy language SAVECOPY
- copyright compliance for photocopies COPYRIGHT COMPLIANCE
- notes/instructions BORROWING NOTES

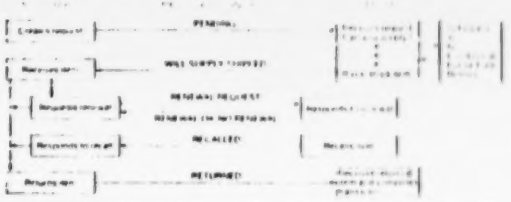
(8) Return to predefined before entering request separator

(9) Correct errors, recording each changed field

(10) Create ILL record

Numbers in parentheses (.) are cross references to Interlibrary Loan User Manual

INTERLIBRARY LOAN CYCLES



RECEIVING LOANS (2.6)

(1) Retrieve WILL SUPPLY or SHIPPED record

(2) Continue searching until you receive one WILL SUPPLY or SHIPPED record

(3) Indicate receipt and create a record

RETURNING LOANS (2.7)

(1) Retrieve RECEIVED record

(2) Continue searching until you receive one RECEIVED record

(3) Edit the following optional fields as appropriate
- (1) BORROWING NOTES
- (9) RETURNED VIA INSURANCE

(4) Indicate return and create a record

RESPONDING TO "CONDITIONAL" RECORDS (3.1.3.2)

(1) Retrieve CONDITIONAL record from Message Waiting File

(2) Continue searching until you locate one CONDITIONAL record

(3) Consider complying w LENDING NOTES
If you cannot comply, cancel request
If you can comply, complete steps 5-7

(4) Respond via online position or paper form

(5) Respond via online position or paper form

(6) Enter appropriate encumbrance or transaction (e.g. invoice) information, copy, conditions

(7) Release record

RESPONDING TO RECALLS (2.7)

(1) Retrieve RECALLED record

(2) Continue searching until you receive one RECALLED record

(3) Indicate return and replace record

RENEWING LOANS (3.3.1)

(1) Retrieve RECEIVED record

(2) Continue searching until you receive one RECEIVED record

(3) Enter extension date (symbols or one open) on or any of following

(4) Release record

REINITIATING REQUESTS (3.3)

(1) Retrieve UNFILLED (EXPIRED or RETRY) record

CANCELING REQUESTS (3.4)

SPECIAL MESSAGES BORROWER (3.7.1)

Updating Overdue Records (3.7.1.1)

Updating RECEIVED* Records (3.7.1.2)

(1) Retrieve WILL SUPPLY or CONDITIONAL record from Message Waiting File or from Search Retrieval. RECEIVED

(2) Continue searching until you receive one RECEIVED* record

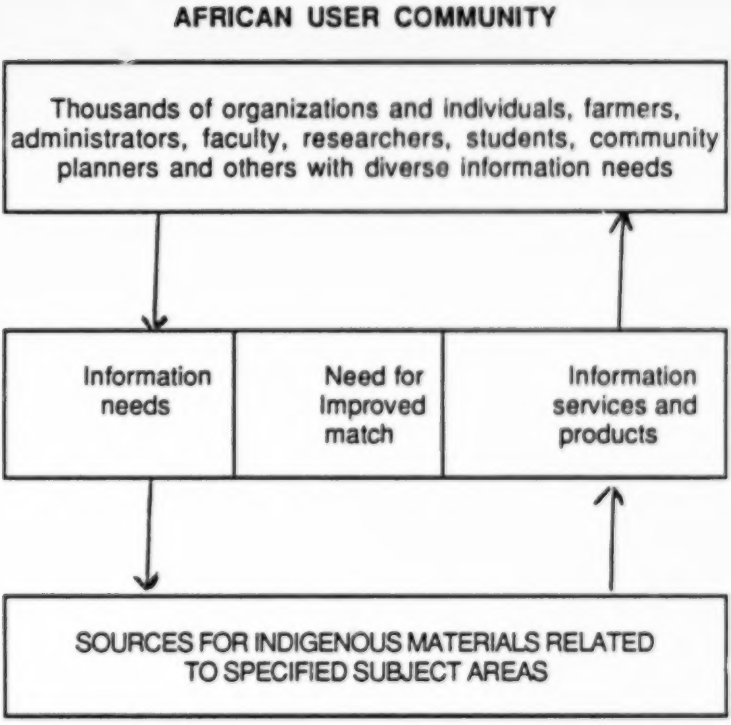
(3) Respond via online position or paper form that you have received the item

(4) Respond via online position or paper form that you have received the item

BEST COPY AVAILABLE

EXHIBIT 4

PRESENT UNCOORDINATED STATUS OF
INFORMATION RESOURCES IN SOUTHERN AFRICA


AFRICAN USER COMMUNITY
Thousands of organizations and individuals, farmers, administrators, faculty, researchers, students, community planners and others with diverse information needs
Information needs
Need for Improved match
Information services and products
SOURCES FOR INDIGENOUS MATERIALS RELATED TO SPECIFIED SUBJECT AREAS

Several university libraries and organizations whose diverse objectives and varied capabilities are relatively uncoordinated among centers.

EXHIBIT 5

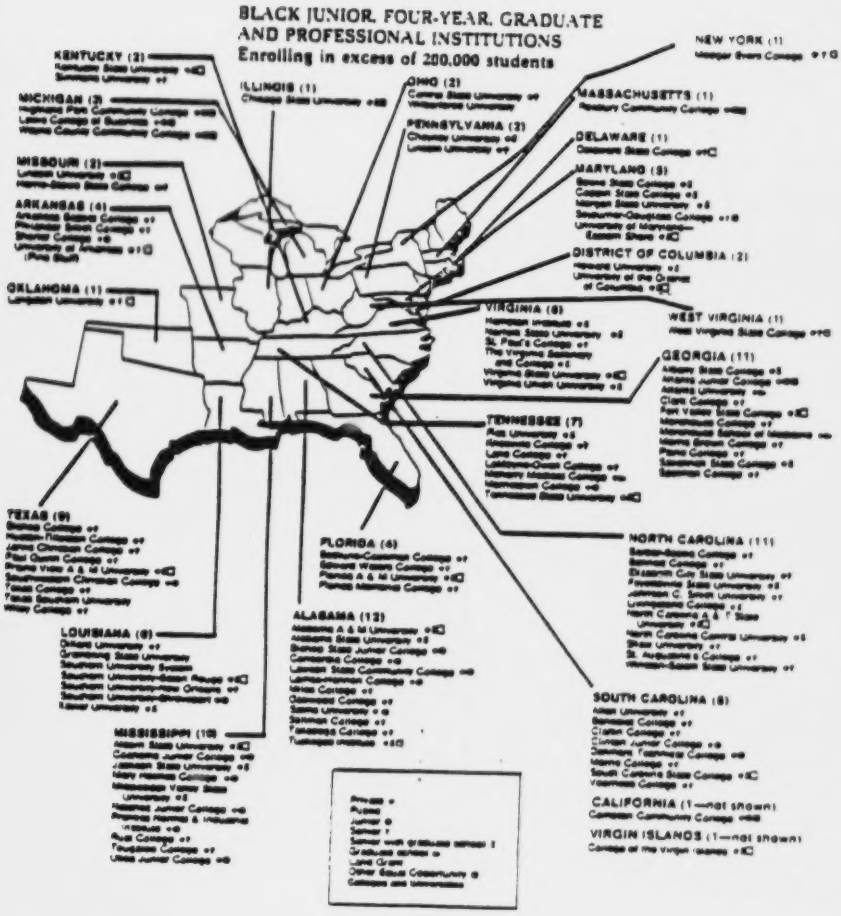
INFORMATION ENTRY FOR BIBLIOGRAPHIC DIRECTORIES

- Title with sub-title
- Author
- Individual, group, community, organization, agency, government or UNICEF Sponsorship
- Geographic location/call number
- Time needed to secure
- Subject Area
- Description of the Contents
- Size and physical desription: book, film, cassette, tape, records, manuscript, memoranda, letter
- Type of activity: project, pilot study, on-going research, emergency or contingency basis, etc.
- Functional aspect: theoretical, operational, analytic, problem solving, literature review, position paper, futuristic or other
- Method: survey, analysis, observation, historical, statistical, descriptive or other.
- Situation: conference, meeting, seminar, training session, workshop or other
- Documentation: report, memoranda, letters, minutes, proceedings, presented papers, etc.
- Scope: regional, international
- Language used
- Availability

- Cost: acceptable currency

- Name, title, telephone and address of people to contact for further information on the subject

EXHIBIT 6



BEST COPY AVAILABLE

EXHIBIT 7

ERIC EDUCATIONAL RESOURCES INFORMATION CENTER

Clearinghouse on Higher Education

THE GEORGE WASHINGTON UNIVERSITY

November 25, 1986

Dr. Steve Mncube
2700 Q Street NW
Apt. 103
Washington, DC 20007

Dear Dr. Mncube:

I am pleased to know that ERIC documents are cited in your Key Issues in Library and Information Science for Southern Africa. I am sure that they will be useful references for your readers.

Your readers may be interested in knowing that ERIC documents dated 1982 and later may be read at the following library:

Human Sciences Research Council
Centre for Library and Information Services
185 Rose Street
Riviera, Pretoria 0186
South Africa.

In addition, microfiche or paper copies of most ERIC documents can be purchased from ERIC at the following address:

ERIC Document Reproduction Service
3900 Wheeler Avenue
Alexandria, VA 22304-5110
U.S.A.

Documents should be ordered with the ERIC "ED" number.

Thank you for your continued support of ERIC's educational database.

Sincerely yours,

Lynn Barnett

Lynn Barnett
Assistant Director

[illegible] ONE DUPONT CIRCLE / WASHINGTON, D.C. 20036-1183 (202) 296-2597

KEY ISSUES IN LIBRARY AND INFORMATION SCIENCE FOR SOUTHERN AFRICA

Dr. Stephen Mncube is a graduate of Syracuse University in Interdisciplinary Studies of Information Science and Education. He was a researcher at Rochester Institute of Technology and Associate Professor of Black Studies at Cortland State University in New York. He has been an educator and political activist for human rights and the struggle for liberation in South Africa and around the world. He served as a coordinator of the United States Environmental Protection Agency's interlibrary loan system. As a consultant, Dr. Mncube has worked with numerous international agencies around the world to train information specialists, organize information resources and develop systems of evaluation and needs assessment. He has authored and presented numerous publications to academic, professional, private, governmental and international organizations, including UNESCO, FID and ASIS. He is presently the director of the language laboratory at the Gordon Adult Education Center within the Washington, D.C. Public School System. He is also an international representative of the Skotaville Publishing House which is the only black-operated publishing house in South Africa.

KEY ISSUES IN LIBRARY AND INFORMATION SCIENCE FOR SOUTHERN AFRICA

A HANDBOOK FOR LIBRARY AND INFORMATION SPECIALISTS

In this modern age of information explosion, one of our most urgent needs is to master information, rather than to be its servant. The servant deals with information pollution, the master commands information.

In Southern Africa a lack of mastery results from having numerous sources, such as libraries, clearinghouses, and resource centers, whose missions end at the point where publications are catalogued and/or information is entered into a computer data base. In other words, there is a major problem with information transfer and utilization. Addressing this problem requires not only time, energy and money but also a plan of action or a framework under which a degree of consistency and cooperation can be brought to information science in Southern Africa.

There are many ways in which Southern African institutions could share resources, reduce costs, and avoid duplication in handling the global flood of information. The focus of this handbook is to provide a workable framework for the develop- ment of library and information science in Southern Africa.